

# Manufacturers Record

## Industry

## Construction

Reg. U. S. Pat. Office



BALTIMORE, MD.

NOVEMBER 5, 1931



## Commodity Prices Advance

The advance in price of several major crops and in commodity prices is of genuine encouragement in the business outlook. With the trend downward, buyers have held off until they realized that a definite upward movement apparently was under way.

It is a bargain time, as the following figures show in comparing the purchasing power of the dollar of September, 1931, with 1926.

Commodity	Cost in 1926	Present Cost
Raw materials . . . . .	\$1.59	\$1.00
Finished manufactures . . . . .	1.35	1.00
Farm products . . . . .	1.65	1.00
Foods . . . . .	1.37	1.00
Hides and leather goods . . . . .	1.18	1.00
Textile products . . . . .	1.59	1.00
Fuel and lighting materials . . . . .	1.58	1.00
Lumber . . . . .	1.53	1.00
Brick . . . . .	1.25	1.00
Cement . . . . .	1.32	1.00
Structural steel . . . . .	1.22	1.00
Paint materials . . . . .	1.54	1.00
House furnishing goods . . . . .	1.18	1.00

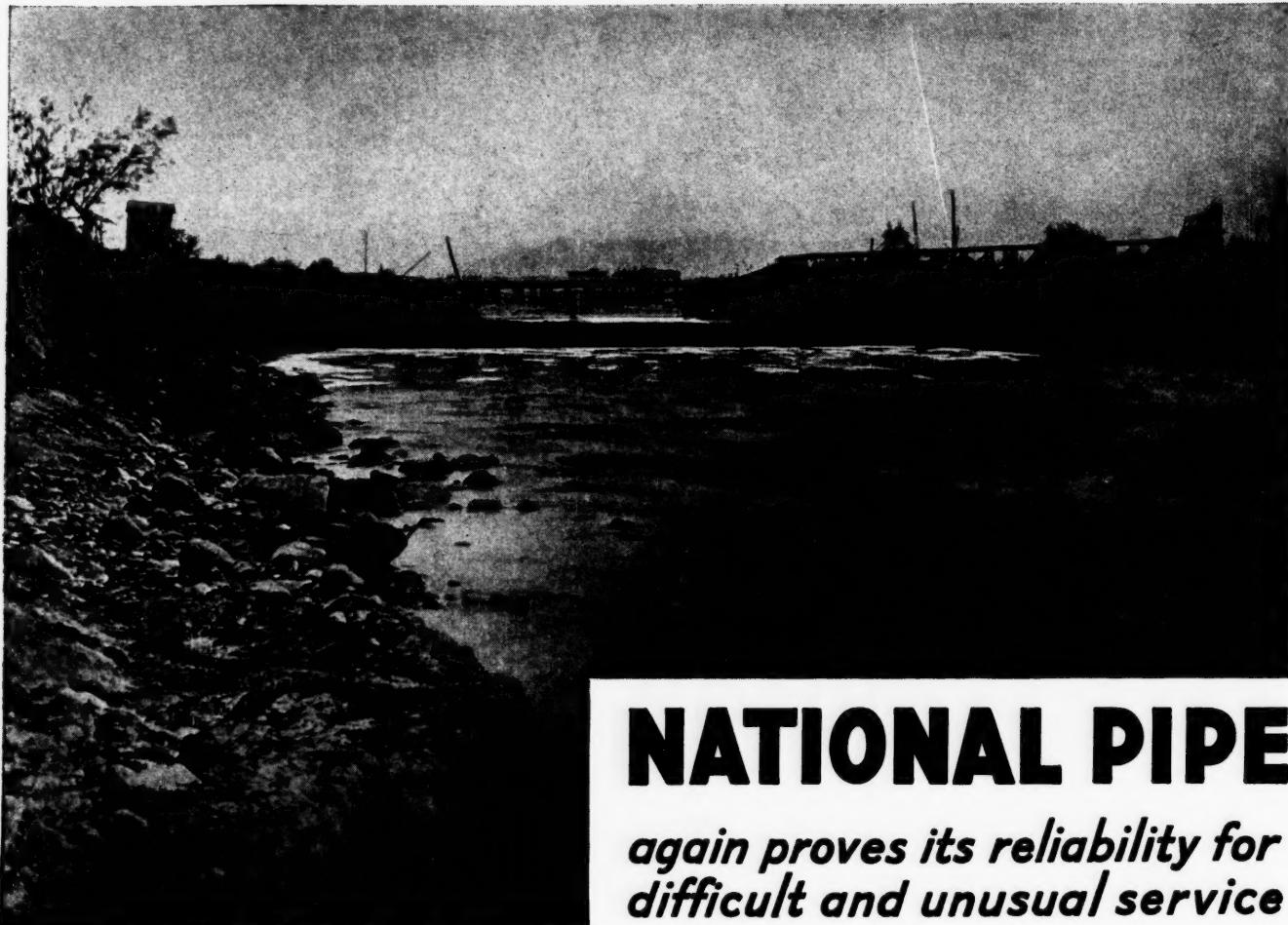
We can purchase for \$1.00 today what it required \$1.45 to buy in 1926. As a matter of fact, based on the September wholesale commodity price index, present prices are about on the level of those of 1913.

The foregoing figures have been compiled from Labor Department reports, and since they were issued an improvement in the market value of cotton, wheat and other major crops has occurred. The rise in cotton values alone in the last two weeks has been more than \$50,000,000.

The opinion is becoming widespread that the low point in general commodity prices has been reached and that such advances as have taken place will be sustained and increased. It is probable that not soon again will such values be available for those whose stocks of goods need replenishment or those who contemplate building.

# ANSWERING THE QUESTION

*"is it durable?"*



## NATIONAL PIPE

*again proves its reliability for difficult and unusual service*

A NATIONAL Pipe line across a swollen river became a tubular bridge without intention. Yesterday well buried below the stream, today the line was not only unsupported from shore to shore but exposed to the force of the current and the impact of timbers and other floating objects until the flood subsided. No engineer would recommend imposing such a test on

NATIONAL Pipe or any other pipe. But the fact that on occasion it has withstood the most abnormal strains, gives added assurance of the trustworthiness of NATIONAL Pipe for all conditions that are likely to affect it in practically any service. Stamina, among other qualities, proved through many years has made NATIONAL, especially for difficult places—

*America's Standard Wrought Pipe*

## NATIONAL TUBE COMPANY

*Frick Building, Pittsburgh, Pa.*

SUBSIDIARY OF UNITED STATES STEEL CORPORATION



AMERICAN BRIDGE COMPANY  
AMERICAN SHEET AND TIN PLATE COMPANY  
AMERICAN STEEL AND WIRE COMPANY  
CARNEGIE STEEL COMPANY  
Pacific Coast Distributors—Columbia Steel Company, Rose Building, San Francisco, Calif.

COLUMBIA STEEL COMPANY  
CYCLONE FENCE COMPANY  
FEDERAL SHIPBUILDING AND DRY DOCK COMPANY

ELGIN STEEL COMPANY  
MINNEAPOLIS STEEL COMPANY  
WATERHOUSE TUBE COMPANY

THE LORAIN STEEL COMPANY  
TENNESSEE COAL, IRON & RAILROAD COMPANY  
UNIVERSAL ASTLIC CEMENT COMPANY  
WILKES-BARRE IRON COMPANY

Entered as second-class matter at the Postoffice, Baltimore, Md., under the act of March 3, 1879. Vol. C, No. 19, weekly.

A N N O U N C I N G

a Complete New Line

of Heavy Pressure

TAPPING SLEEVES and VALVES

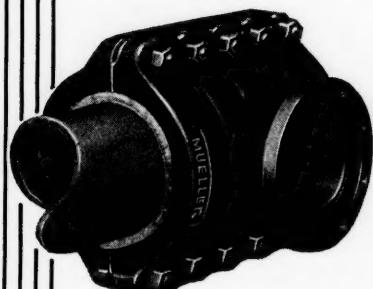
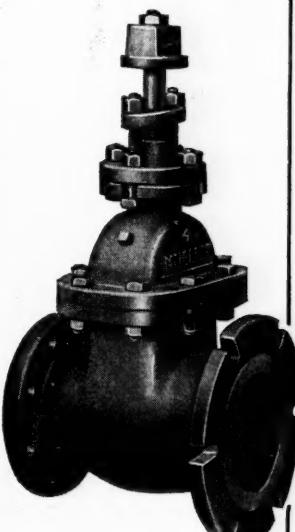


Illustration shows  
FLANGED OUTLET  
Sleeve G-110 and Valve  
G-160, for working pres-  
sure up to 150 pounds.  
Note the sleeve caulked  
on the main.

Three quarters of a century ago, the founder of this company invented the tapping machine. From that date to this, MUELLER has been identified with every step of progress that has been made in drilling and tapping mains under pressure.

NOW—MUELLER announces a complete new line of tapping sleeves and valves for making lateral or branch connections to mains under heavy pressure. They combine all of the features that 74 years of uninterrupted manufacturing experience have proved to be the best for satisfactory service in this field, plus MUELLER quality and precision.



Note These Superior Points of MUELLER  
SLEEVES - - - - - VALVES

Sleeve construction permits use of any type joint on bell and spigot mains. Heavy-built for strength and rigidity. Maximum number of rust proof bolts. Raised machined and grooved gasket surface insures perfect joint. Gasket entirely behind bolt which permits caulking if necessary. Ears on gasket hold it in place while bolting sleeve together. Cast rings inside sleeve permit yarning and caulking ends and save from  $1/3$  to  $2/3$  of the lead necessary in solid poured type sleeve. One less joint to caulk than on solid poured sleeves. Cast ring inside sleeve centers it; no troublesome lead wedges. All joints accessible from outside. Bolt heads lock against casting—no washers to rust—only one wrench needed to tighten. Two back halves may be used for repair sleeves; two front halves may be used for double connection. Square end permits use of MUELLER pipe jointer.

Strong, well proportioned design. Simple mechanism eliminates many sources of costly trouble. Gates forced out against seats when closing, producing shearing action which cleans the seats. Reverse wedge mechanism pulls gates from seats before opening which prevents scoring of seating surfaces. Ball wedge on gates permits them to assume angle of seats. Stop and guide valve bonnet prevents raising gates out of contact with seats and guarantees easy closing. Spreading lugs in body located up out of way so foreign matter will not be deposited on them and interfere with complete closing of valve. No operating mechanism in bottom of valve to become fouled. Angled spreading lugs in body make self centering so that valve may be operated in any position. Stem, wedges and seating surfaces made of special MUELLER bronze.

BELL AND SPIGOT OUTLET valve and sleeve also included in new line. Write  
MUELLER CO., (Established 1857) factory: Decatur, Illinois. Branches: New York,  
Dallas, Atlanta, San Francisco, Los Angeles, Chicago. Canadian Factory:  
MUELLER, Limited, Sarnia.

**MUELLER**

Trade-Mark Registered U. S. Patent Office

McKiernan-Terry Pile Hammer,  
rigged with Roebling "Blue Center"  
Wire Rope, in pile pulling  
service

Where a Rope  
*must be a glutton  
for punishment*

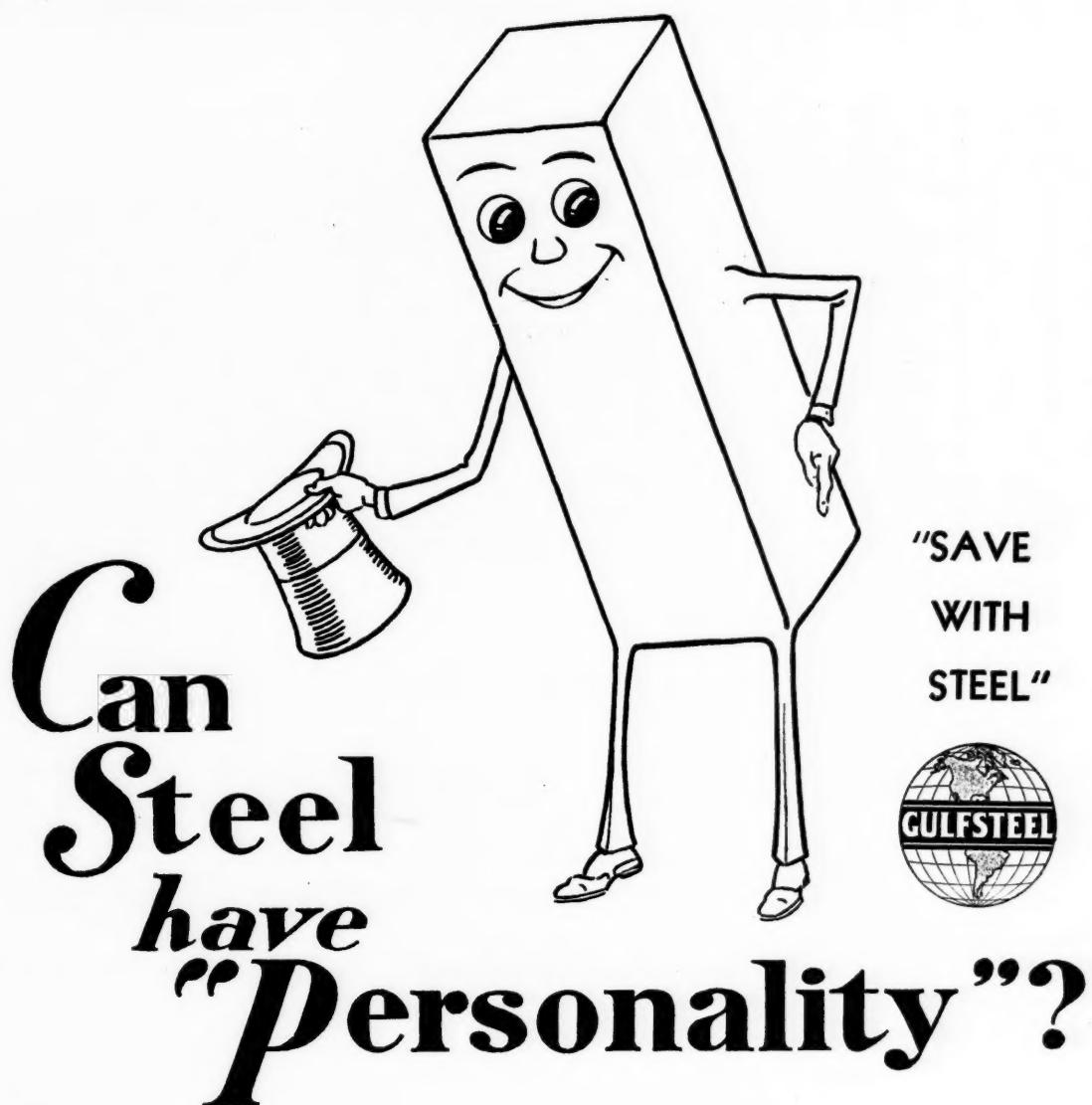
It takes a rope that won't call quits—for this pile hammer pulling service. It takes a rope that can stand relentless punishment—heavy strains, sudden shocks, abrasion. ¶That is why Roebling "Blue Center" Wire Rope has proved so satisfactory for pile hammer pulling rigging. ¶"Blue Center" is the finest wire rope made—and is recommended for use on a wide variety of equipment where service is especially severe. It is a rope of great strength and stamina—made to most exacting standards—of a superior grade of steel.

JOHN A. ROEBLING'S SONS COMPANY, TRENTON, N.J.  
WIRE • WELDING WIRE • FLAT WIRE • COPPER AND INSULATED  
WIRES AND CABLES • WIRE CLOTH AND WIRE NETTING  
Branches in Principal Cities      Export Dept.: New York

**ROEBLING**  **WIRE ROPE**

"BLUE CENTER"  
STEEL





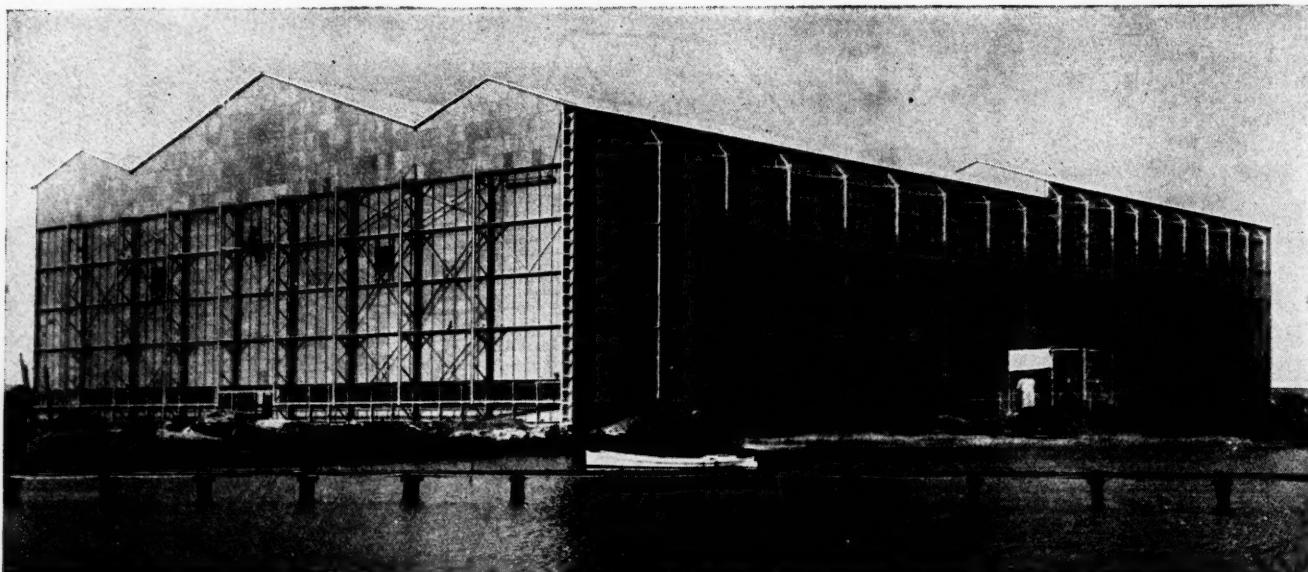
**P**ERSONALITY in steel is that *particular fitness* over and above metallurgical and physical specifications that makes it *best suited* for the *individual purpose* for which it is bought. If you are purchasing steel sheets, plates, bars, angles, channels, shapes, rods or wire—and will tell us for what purpose this steel is to be used, we'll

see that you get the steel *best suited for that purpose*. All manufacturers cannot put this personality into their steel, but GULF-STEEL can, because with complete procedure control we can go as far back in the stages of manufacture, even to the ore itself, to see that you get the steel best suited to your individual needs. *Send us your inquiries.*

**GULF STATES STEEL COMPANY**  
BIRMINGHAM, ALABAMA

---

**GULF STEEL**



## 500,000 square feet of CAREYSTONE CORRUGATED

*... the Roofing and Siding that defies  
fire, weather and corrosion*



Careystone Corrugated is supplied in sheets cut to size, ready for application on the steel structure.

500,000 square feet of Careystone Corrugated Roofing and Siding were used in constructing this testing building of the National Advisory Committee for Aeronautics at Langley Field, Virginia—a structure 400 feet long, 200 feet wide and 105 feet high at the peak.

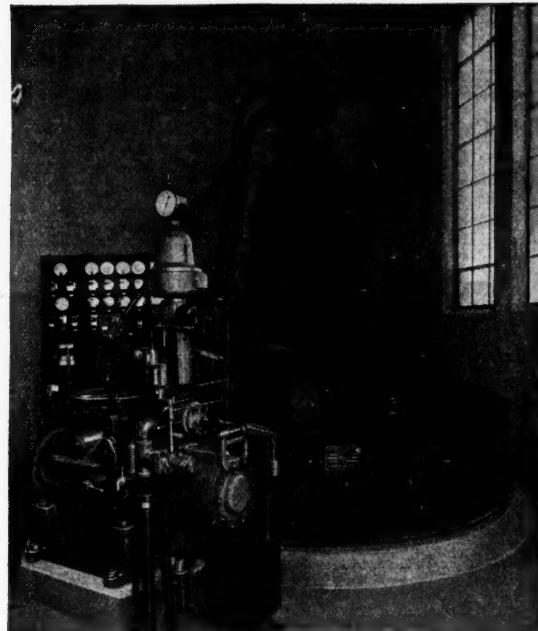
Careystone Corrugated Roofing and Siding, made of asbestos and Portland cement, is as fire-proof as stone. Rustproof and unaffected by the weather, it never requires painting or other preservative treatment. The first cost is low, and the large units speed application, thus reducing construction expense.

Because of its economic advantages, Careystone Corrugated is being increasingly used in constructing factories, warehouses, hangars, loading platforms, etc., in every part of the country. Investigate this modern building material; we will supply, without obligation, sketches and cost estimates for any proposed structure. Write for samples and complete data.

**THE PHILIP CAREY COMPANY • Lockland, Cincinnati, Ohio**  
Branches in Principal Cities

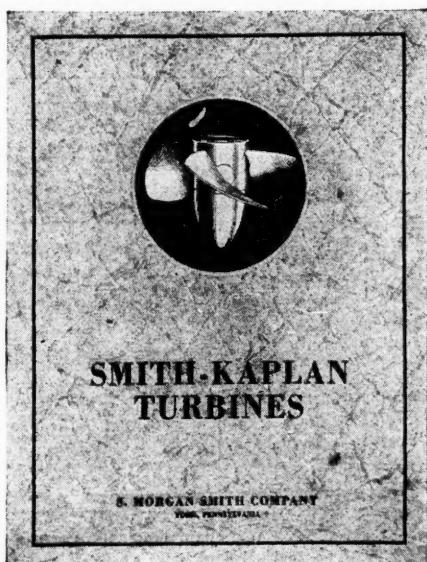
BUILT-UP ROOFS ASPHALT PRODUCTS ELASTITE EXPANSION JOINT WATERPROOFINGS ROOF PAINTS		HEAT INSULATIONS ASBESTOS MATERIALS CAREYSTONE CORRUGATED SIDING ASA-SLATE SHINGLES ROOFING
---	--	---

"563,000 kw.-hrs.  
Saved During 1930  
by a SMITH-KAPLAN  
turbine . . . "



Interior of Lake Walk Station

See pages 26-27 in the Kaplan Catalog



The first automatically adjustable blade Smith-Kaplan Turbine installed in the United States was put in operation at Lake Walk Plant of the Central Power & Light Company, July, 1929.

There are two hydro plants here—the upper is equipped with a Francis type turbine and the lower with the Kaplan, so that interesting operating comparisons can be made.

During 1930, the difference between the two efficiencies indicates a saving of 563,000 kw.-hrs. for the Kaplan, as compared to the fixed-blade type . . .

Complete Engineering Data is given on pages 26-27 of the new Kaplan Bulletin 123-A. *You should have this Bulletin for your files. Send for it. It is free.*

**S. MORGAN SMITH CO.** HYDRAULIC TURBINES

Department "M"

York, Penna., U. S. A.

Boston—Chicago—Albany—Salt Lake City—Denver—Portland, Ore.—San Francisco  
(Associated Company—S. Morgan Smith—Inglis Co., Ltd., Toronto, Canada)

## DIRECTORY

ARCHITECTS

CHEMICAL ENGINEERS

ENGINEERS

CHEMISTS

GEOLOGISTS

ACCOUNTANTS

CONTRACTORS

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

**J. B. Converse & Co., Inc.**  
*Engineers*  
 Industrial Investigations, reports, plans, estimates, supervision.  
 MOBILE, ALA.

**Milburn, Heister & Co.**  
*Architects*  
 WASHINGTON, D. C.

**Hills and Youngberg**  
*Engineers*  
 Drawings  
 Rail and Water Terminals  
 River and Harbor Improvements  
 Water Developments—Shore Protection  
 Investigations and Reports  
 21 Laura St., P. O. Box 1145  
 JACKSONVILLE, FLA.

**Wm. J. J. Chase, A. I. A.**  
*Architect*  
 Public and Commercial Buildings  
 140 Peachtree St. ATLANTA, GA.

**G. Lloyd Preacher & Co., Inc.**  
*Architects and Engineers*  
 501 Mortgage Guarantee Bldg.  
 ATLANTA, GA.

**Elroy G. Smith**  
*Consulting and Designing*  
 Civil-Hydraulic Engineer  
 Industrial Hydro-Electric Development  
 & Specialty  
 313-313-A Herald Bldg., AUGUSTA, GA.

**Hornbuckle Contracting Co.**  
*INCORPORATED*  
 Municipal Improvements  
 Industrial Village Utilities  
 ATLANTA, GA.

**Wiedeman and Singleton, Inc.**  
 (Successors to Paul H. Norcross)  
*Consulting Engineers*  
 WATER WORKS, SEWERS, SEWAGE  
 DISPOSAL, APPRAISALS, VALUATIONS, REPORTS  
 Candler Building ATLANTA, GA.

**J. Henry Hall**  
*Engineer*  
 Industrial and Public Utilities  
 Financing—Reorganization  
 Reports, Design, Construction  
 LEXINGTON, KY.

**S. E. Huey**  
*Consulting Engineer*  
 Civil, Structural, Natural Gas  
 Ouachita Bank Bldg., MONROE, LA.  
 City Bank Bldg., SHREVEPORT, LA.

**J. E. Greiner & Company**  
*Consulting Engineers*  
 Design, Construction, Investigation, Advisory Service—Bridges, Docks, Piers, Warehouses and other Engineering Structures.  
 1201 St. Paul St., BALTIMORE, MD.

**Whitman, Requardt & Smith**  
*Engineers*  
 Water Supply, Sewerage and Structural Engineering, Reports, Designs, Valuations.  
 Baltimore Trust Bldg., BALTIMORE, MD.  
 ATLANTA, GA. ALBANY, N. Y.

**Chas. T. Main, Inc.**  
*Industrial Engineers*  
 Mills, Warehouses, Complete Developments.  
 Electrical, Steam and Water Power Reports Appraisals  
 201 Devonshire St. BOSTON, MASS.

**C. A. P. Turner**  
*Consulting Engineer*  
 M. Am. Soc. C. E. Reinforced concrete and Structural Steel Bridges, Buildings, and Manufacturing Plants.  
 300 Builders Exchange Bldg., MINNEAPOLIS, MINN.

**Consoer, Older & Quinlan, Inc.**  
*Mems. A. S. C. E.*  
*Consulting Engineers*  
 Water Supply—Sewerage—Industrial Engineering  
 317 N. 11th St. ST. LOUIS, MO.  
 205 W. Wacker Drive, CHICAGO, ILL.

**Kansas City Bridge Co.**  
*Established 1893*  
 Builders for Railroad and Highway Bridges  
 River Improvement Work  
 General Office, 215 Pershing Road (Union Station Plaza), KANSAS CITY, MO.

**W. S. Lee Engineering Corporation**  
*Consulting Engineers*  
 Hydro-Electric Developments, Central Steam Stations, Industrial Building, Institutional Buildings.  
 535 Fifth Avenue Power Building NEW YORK CHARLOTTE, N. C.

**MacElwee & Crandall, Inc.**  
*Industrial and Civil Engineers*  
 Investigations, Reports, Design, Supervision—Port Development, Piers, Terminals, Airports, City Planning, Water Front, Reclamation, Industrial Surveys  
*Main Office:*  
 705 Terminal Bldg. 11 West 42nd St. ROCHESTER, N.Y. NEW YORK CITY

**Morris Knowles, Inc.**  
*Engineers*  
 Water Supply and Purification, Sewerage and Sewage Disposal, Valuations, Laboratory, City Planning.  
 PITTSBURGH, PA.

**Gardner & Howe**  
*Structural Engineers*  
 Steel and Reinforced Concrete Buildings, Bridges and Viaducts  
 Porter Building MEMPHIS, TENN.

**C. N. Harrub Engineering Co.**  
*Member Am. Soc. C. E.*  
*Civil and Sanitary Engineers*  
 Water Supply, Sewerage, Paving and Structural Improvements  
 705-9 Fourth & First Nat'l. Bk. Bldg., NASHVILLE, TENN.

**Engineering Service Corp.**  
*Consulting Engineers*  
 Civil-Electrical-Mechanical-Refrigeration COLD and DRY STORAGE WAREHOUSES  
 DESIGNERS  
 Reports—Appraisals—Designs—Surveys  
 Docks and Harbor Designs—Ind. Engrs.  
 Water Sup., Sewer Sys., Oil and Gas Lines  
 HOUSTON, TEXAS, U. S. A.

**Robert Cramer**  
*Consulting Engineer*  
 Sewage Disposal Plants and Sewerage Systems—Utilization and Disposal of Industrial Wastes, Power Plants, Design, Construction, Operation, Laboratory Service, Valuations and Reports.  
 647 W. Virginia St., MILWAUKEE, WIS.

**Smallman-MacQueen**  
*Construction Co., Inc.*  
*Engineers and Contractors*  
 BIRMINGHAM, ALA.

**Algernon Blair**  
*Contractor*  
 MONTGOMERY, ALA.

**The John W. Cowper Co., Inc.**  
*General Contractors*  
 843-851 National Press Bldg., WASHINGTON, D. C.

**Southern Erectors, Inc.**  
*Steel Erectors*  
 ATLANTA, GA.  
 TAMPA, FLA.

**Walker Electrical Company**  
*Electrical Contractors*  
 General Offices: ATLANTA, GA.  
 Sales Offices:  
 ATLANTA, GA. COLUMBUS, GA.  
 GREENSBORO, N. C.

**Hoosier Engineering Company**  
*20 North Wacker Drive, CHICAGO*  
*Erectors of Transmission Lines*  
*Electric—Gas—Oil*  
 Thompson Building 225 Broadway  
 SEATTLE, WASH. NEW YORK, N. Y.

**J. V. & R. T. Burkes, Inc.**  
*General Contractors*  
 MEMBER A. G. C. NEW ORLEANS

**Webb Electric Company**  
*Electrical Contractors*  
 Industrial, Commercial and Institutional Electrical Installations.  
 ANDERSON, S. C.

**Fiske-Carter Construction Co.**  
*General Contractors*  
 GREENVILLE, S. C.  
 SPARTANBURG, S. C.

**Poe Piping & Heating Co.**  
*Contractors*  
 For Power Piping, Heating and Sprinkler Systems  
 108 S. Main St. GREENVILLE, S. C.

**Steel & Lebby**  
*JOHN A. STEEL, JR.*  
*THOS. D. LEBBY*  
*Engineers and Constructors*  
 The design and erection of concrete and steel structures:  
 Holston Bank Building, KNOXVILLE, TENN.

**The Warner Service Company**  
*Electrical and Mechanical Contractors*  
 Cor. Clinch and Central Ave., KNOXVILLE, TENN.

**Charles W. Alpaugh & Sons**  
*Hydraulic and Construction Engineers*  
 Dams a Specialty: Investigations, Estimates Free  
 MANASSAS, VA.

**Virginia Engineering Co., Inc.**  
*General Contractors*  
 Government — Municipal — Industrial Buildings — Power Plants — Heating Plumbing — Electrical — Highways Sewer and Water Systems — Dams Fire Protection — Refrigeration 1st Nat'l Bk Bldg. NEWPORT NEWS, VA.

**J. L. Myers & Sons**  
 Drillers of Shallow and Deep Wells in the South Since 1894  
 Box 105, T. C. Station DENTON, TEXAS

**Audit Company of the South**  
 Charles James Metz  
*President*  
 Mem. American Institute of Accountants  
 Certified Public Accountant of Georgia ATLANTA, GA.

**Joe B. Martin**  
*Quantity Surveyor*  
 CHARLOTTE, N. C.  
*Sixteen Years Actual Experience*

**Charles Herbert Spring**  
*QUANTITY SURVEYS*  
 835 Jefferson Standard Bldg., GREENSBORO, N. C.

**The Howard-Hickory Co.**  
*Nurserymen*  
 Landscape Gardeners  
 Correspondence solicited  
 HICKORY, N. C.

**The Picard Laboratories**  
*Chemists and Inspecting Engineers*  
 Inspection of Cast Iron Pipe, Structural Steel, Cement, Railroad Equipment, etc.  
 Chemical Analysis of all kinds.  
 Representation in all Principal Cities  
 Clark Building, BIRMINGHAM, ALA.

**Stillman & Van Siclen, Inc.**  
*Chemists and Chemical Engineers*  
 Analysis and Inspection of Asphalt, Paving Materials, Cement, Concrete Building Materials.  
 227 Front Street NEW YORK  
 BEEKMAN 5261

**Dow & Smith**  
 A. W. Dow, Ph.B.; F. P. Smith, Ph.B.  
 Mem. Am. Inst. Ch. Engrs.  
 Mem. Am. Soc. Civ. Engrs.  
 Chemical Engineers, Consulting Paving Engineers, Asphalts, Bitumens, Cement, Paving Materials  
 131 East 23rd St. NEW YORK

**McCallum Inspection Company**  
*Inspection Engineers*  
 Specialists in Croosated Materials  
 116 West Berkley Avenue, NORFOLK, VIRGINIA

FAMILIARIZE yourself with the SOUTH'S progress by reading the MANUFACTURERS RECORD.

## DIRECTORY

ARCHITECTS

ENGINEERS

CHEMISTS

GEOLOGISTS

CHEMICAL ENGINEERS

ACCOUNTANTS

CONTRACTORS

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

## The J. B. McCrary Company

Engineers

ATLANTA

GEORGIA

## MUNICIPAL IMPROVEMENTS

We design and construct Water-Works, Electric-Light and Sewer Systems—Paving and Road Work.

## Hardaway Contracting Company

Engineers Contractors

Water Power Developments, Bridges

COLUMBUS, GEORGIA

## Cornell-Young Company

INCORPORATED

General Contractors

Railroads and Highways, Reinforced Concrete and Steam Shovel Work.  
704 Georgia Casualty Bldg. MACON, GEORGIA

## Bylesby Engineering &amp; Management Corporation

Wholly-owned Subsidiary of  
Standard Gas and Electric Company

281 South LaSalle Street, Chicago

NEW YORK

PITTSBURGH

SAN FRANCISCO

## JOSEPH GODER

Consulting Engineer

## INCINERATORS

612 N. Michigan Ave.

CHICAGO, ILLINOIS

## Lockwood Greene Engineers, Inc.

Plans—Specifications—Reports—  
Appraisals—for Industrial Plants

NEW YORK

BOSTON CHICAGO CLEVELAND SPARTANBURG

## W. S. BARSTOW &amp; COMPANY

INCORPORATED

ENGINEERING — DESIGN — CONSTRUCTION  
INDUSTRIAL PLANTS — PUBLIC UTILITIES

Consultation Invited on Building Projects

120 Wall Street  
NEW YORK CITY412 Washington Street  
READING, PENNA.

## Frederick Snare Corporation

Contracting Engineers

Difficult Foundations and Engineering Problems a Specialty

114 Liberty Street  
New York

PHILADELPHIA

HAVANA

## The J. G. White Engineering Corporation

Engineers—Constructors

48 Exchange Place

NEW YORK

Tucker & Laxton  
Contracting EngineersFilters, Concrete Work, Hydro-Electric and Steam Electric Construction  
CHARLOTTE, NORTH CAROLINA

## J. E. Sirrine &amp; Company

Engineers

Factory Design: Hydro- and Steam-Electric Plants; Warehouses,  
Steam Utilization, Sewage Systems, Appraisals, Valuations, Reports.  
General Offices: GREENVILLE, SOUTH CAROLINA

## Allen J. Saville, Inc.

ENGINEERING AND CONSTRUCTION

Electric Building

RICHMOND, VIRGINIA

## WILEY &amp; WILSON

Consulting Engineers

STEAM AND ELECTRIC POWER PLANTS

CENTRAL PLANT HEATING SYSTEMS

Heating and Ventilating Equipments for Public and Private Buildings

WATER SUPPLY, SEWERAGE AND SEWAGE DISPOSAL

MAIN OFFICE: LYNCHBURG, VA. BRANCH OFFICE: RICHMOND, VA

## Kennedy-Rieger Drilling Co., Inc.

Engineers &amp; Contractors

Diamond Drill &amp; Wash Borings

30 Church Street

NEW YORK CITY

## Sprague &amp; Henwood, Inc.

Diamond Core Drilling and Wash Borings.

For Buildings, Bridges, Dams and all kinds of Minerals

"ANYWHERE"

Main Office

SCRANTON, PA

## Mott Core Drilling Company

Diamond Core Drill Contractors

We Test Coal, Clays and Mineral Properties, Foundation Testing, Dams,  
Bridges, Buildings, Wash Borings, Dry Samples.

MAIN OFFICE HUNTINGTON, W. VA.

## Tilghman Moyer Company

Bank Architects and Builders

ALLENTOWN

PENNSYLVANIA

## Robert W. Hunt Company

ENGINEERS

Inspection—Tests—Consultation

22nd FOOR INSURANCE EXCHANGE, CHICAGO.

Laboratories and Offices in all Large Cities

Established 1881

## Froehling and Robertson, Inc.

Inspection Engineers and Chemists

Inspection of Cement, Steel, Pipe, Timber, Brick, Tile  
Design and Control of Asphalt and Concrete Mixtures  
Water Analysis a Specialty.

RICHMOND

NEW YORK CITY

## Pittsburgh Testing Laboratory

ANALYSIS INSPECTION TESTING RESEARCH

PITTSBURGH, PA.

Branch Offices in the Principal Cities

## Southwestern Laboratories

Chemical and Testing Engineers

Inspection Steel and Cement for Bridges and Buildings, Creosoted Timber,  
Asphalt, Brick, Cast Iron Pipe, Railroad Equipment, Bituminous Pavement  
at Plant, Chemical Analysis, Etc. Representation at usual points of origin.

FORT WORTH DALLAS HOUSTON AMARILLO SAN ANTONIO

"From Research to Plant in Operation"

## Meigs, Bassett &amp; Slaughter, Incorporated

Chemical Engineers

Research—Design—Engineering

Reports on Projects for Financing

Drexel Building PHILADELPHIA

# PERFORMANCE

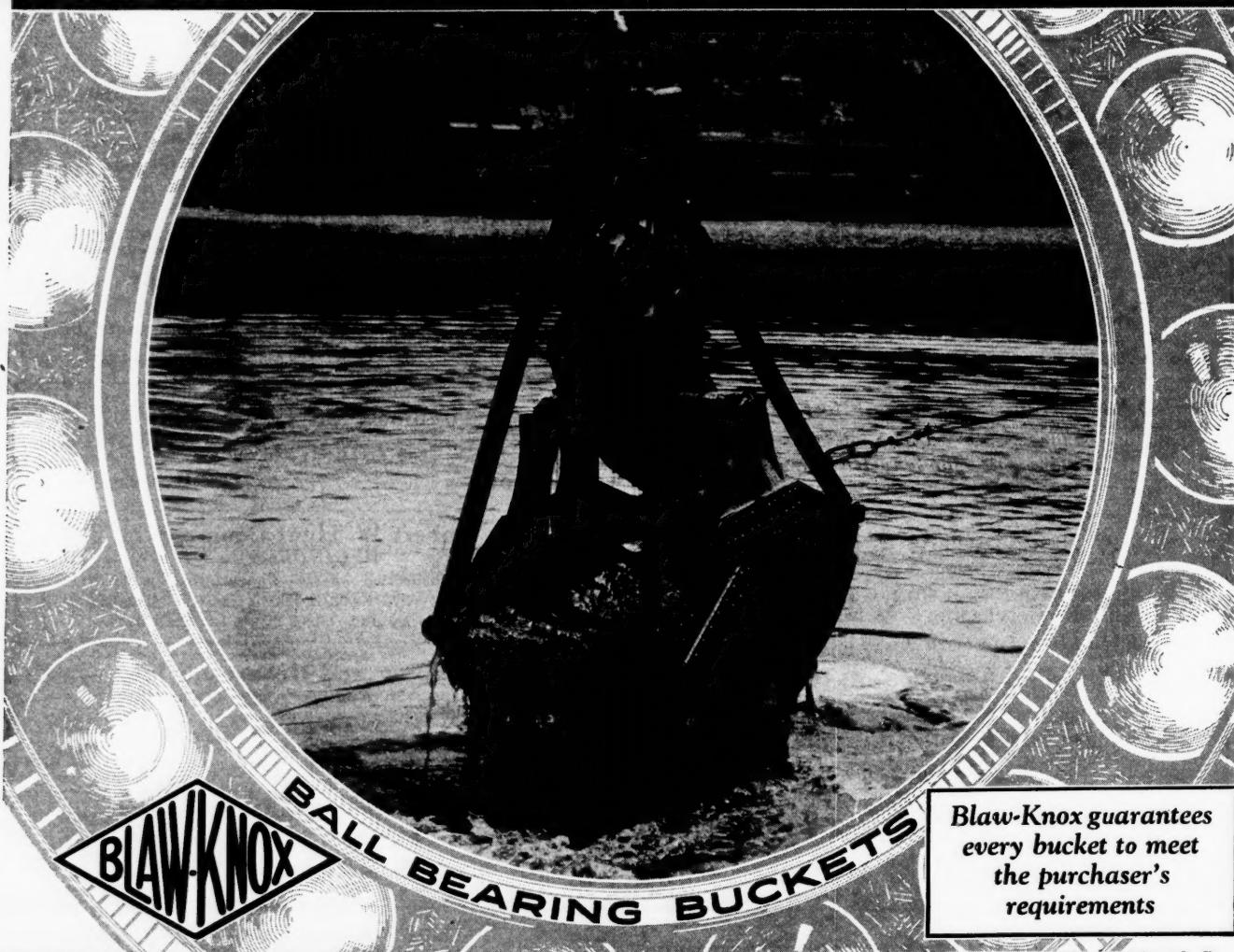


A far cry, race horses to clamshells, yet performance is the common measure of their value to owners and users.

The thousands of Blaw-Knox BUCKETS now in active use on every variety of construction work, bear testimony to the profitable performance of these tools on every operation from the hardest digging to speedy rehandling.

Blaw-Knox BUCKETS have twenty-five years of engineering experience behind them; they have been redesigned and mechanically improved to keep step with advanced methods. A Blaw-Knox BUCKET, part by part, is made for the duty it is called upon to perform—from ball bearings to hardened guide rollers it represents extremes of toughness and anti-friction. This means PERFORMANCE which is guaranteed in every Blaw-Knox BUCKET you buy.

## MEASURES THE VALUE OF BLAW-KNOX BUCKETS



2024 Farmers Bank Bldg., Pittsburgh, Pa.

New York  
Chicago  
Buffalo

Philadelphia  
Birmingham

Cleveland  
Detroit  
Baltimore

Export Division:  
Blaw-Knox International Corporation,  
Canadian Pacific Bldg., New York

London, England, New Oxford House, Hart St.,  
Holborn W.C.1.—Paris, France, 1 Rue de Clichy  
—Milan, Italy, 6, via S. Agnese, 6—Dusseldorf,  
Germany, 17 Bismarckstrasse

# BLAW-KNOX

# TABLE OF CONTENTS

Baltimore, Md., November 5, 1931

## EDITORIALS

Commodity Prices Advance.....	Cover Page
To Promote Fair Competition.....	13
Direct Taxation for All.....	14
Employment in Manufacturing.....	14
Our \$90,000,000,000 Opportunity.....	15
Self Regulation of Industry.....	15

## NEWS and FEATURE ARTICLES

\$1,000,000 Expansion to Paper Plant in North Carolina.....	16
\$592,000,000 in Southern Construction Awards in Ten Months.....	17
\$1,000,000 Power Extensions in West Virginia.....	17
Contract for \$2,000,000 Building Group in Nashville.....	17
Double Tracking on the Missouri Pacific West of St. Louis.....	18
Bids on \$5,000,000 of Tennessee Bonds.....	20
Better Business Is Reported by Manufacturers.....	20
Steel Fabricators Plan Stabilization.....	21
Buildings Costing \$3,625,000 for University of Texas.....	21
Agricultural Wastes and Industry.....	By C. A. Basore 22
Signs of Better Business.....	24
Freight Rate Differential Defended.....	By R. L. McKellar 25
High-Pressure Welded Boilers Produced at Chattanooga.....	27

## SPECIAL DEPARTMENTS

*Construction, New Industries and Contracts, Beginning on Page 33*

Iron, Steel and Metal Market.....	28	Trade Literature .....	44
New and Improved Equipment.....	30	Industrial News .....	46
Letters From Our Readers.....	32	Financial News .....	52

Classified Index for Buyers.....	68
Alphabetical Index to Advertisers.....	82

## MANUFACTURERS RECORD

**MAIN OFFICE**  
Manufacturers Record Building,  
Commerce and Water Streets,  
Baltimore, Md.

Published Every Thursday  
*by the*  
**MANUFACTURERS RECORD**  
PUBLISHING CO.  
FRANK GOULD, President

**BRANCH OFFICES**  
Chicago—11 S. LaSalle St.  
New York—901 Singer Bldg.

Subscription Rates: \$6.50 a year (in advance); six months, \$3.50; three months, \$2.00 to United States, Mexico, Cuba, Porto Rico, Hawaii and the Philippines. For Canada add postage \$2.60 a year. For other foreign countries add postage \$3.50 a year. Single copies, 20c.; back numbers, one to six months, 50c. each; over six months, \$1.00.

PUBLISHERS DAILY CONSTRUCTION BULLETIN AND BLUE BOOK OF SOUTHERN PROGRESS  
Member, A.B.C.

# LEADITE

Trade Mark Registered U.S. Pat. Office

For Jointing Cast-Iron Water Mains  
Saves at Least 75%

*Leadite Tested and Used for Over 30 Years*  
Leadite Joints Improve with Age

The Leadite Co., Land Title Bldg., Philadelphia, Pa.

**No Caulking'**

# RYERSON STEEL-SERVICE

Immediate shipment of steel and allied products including Bars, Structural, Sheets, Special Tool and Alloy Steels, Allegheny Metal, Cold Finished Steels, Babbitt Metals, Boiler Fittings, Welding Rod and Equipment, etc. Write for Stock List. Joseph T. Ryerson & Son, Inc., Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City.

## Strong, Permanent, Non-Climbable **FACTORY FENCE**

Stewart is low-cost producer of Chain Link Wire and Wrought Iron Fence. Nearest Stewart Fence Specialist will help you solve your fence problems. No obligation. Write for Factory Fence catalog.

THE STEWART IRON  
WORKS CO., Inc.,  
749 Stewart Block,  
Cincinnati, Ohio



# DETROIT UNDERFEED STOKERS

for every service

**Detroit Stoker Company**  
General Motors Bldg - Detroit.

# Fertilizing a Whole State

## Texas

abounds in natural resources and unfinished products that await development, finishing and marketing. State lines are so widely separated that people in one section are not fully aware of what other sections offer. It is difficult for a Texan to tell the whole story of Texas.

Business leaders have recognized the urgent need for centralization of Texas information concerning those things which are destined to send the state forward with new momentum. Out of this recognition has come an organization,

## PROGRESSIVE TEXANS, *Incorporated*

which will assemble and disseminate definite, commercially usable information concerning the resources of Texas and the Southwest. It is a movement intended to fertilize the entire state and its resources that they may grow and bear fruit with increased rapidity and profit to producer and manufacturer.

PROGRESSIVE TEXANS, *Incorporated*, (Austin, Texas), a non-sectional organization, is fostered by business leaders of all of the widely separated areas. There is force behind the organization. It has sincerity of purpose—to assist Texans in developing Texas.

## TEXAS POWER & LIGHT Co.

General Offices - - - Interurban Building

Dallas, Texas

# Manufacturers Record

Reg. U. S. Pat. Offce

Devoted to the Upbuilding of the Nation Through the Development  
of the South and Southwest as the Nation's Greatest Material Asset

Vol. C No. 19 }  
Weekly }

BALTIMORE, NOVEMBER 5, 1931

{ Single Copies, 20 Cents.  
\$6.50 a Year

## To Promote Fair Competition

**S**OUND stabilization of competition, through proper stabilization of prices, inevitably will redound to the profit of both the seller and the buyer of commodities or services. As defined by the Machinery Builders Society, "firm bidding" or non-juggling of competitive prices, is simply:

"The submission of a price accurately determined with reference to cost, to remain unchanged unless a change in buyer's specifications warrants a different quotation."

Behind this plain principle are grouped all the forceful factors of business acumen. The principle includes business logic, business responsibility and business ethics. Among the antitheses are unfair competition, hurtful overproduction, profitless trade, discouragement for the buyer, slackening of all industry, and even governmental intrusion. As the MANUFACTURERS RECORD has said in urging businesslike practices, "price-cutting below cost destroys profits, threatens employment and promotes instability."

In recognition of these truths, as far back as 1927 a campaign for fair competition was instituted by such industrial leaders as W. W. Nichols of the Allis-Chalmers Manufacturing Company; W. E. Farrell, president of the Easton Car & Construction Company and chairman of the Firm Bidding committee of the Machinery Builders Society, and Robert M. Gaylord, president of the Ingersoll Machine Company, with Arthur Falk of the Falk Corporation and others in active cooperation. Also, the Federal Trade Commission took a hand and prohibited the sale of goods without profit with intent to stifle competition. The campaign was directed against both "purchasing profiteers" and "throat-cutting competitors."

First fruits of the campaign matured in October, 1928, when the Machinery Builders Society adopted a resolution advocating the submission of one bid only, and the principle of the firm-bidding definition, as

quoted. The evil, however, was deep rooted, and the eradication was not rapid. Later, a "single bid" rule was approved by the Federal Trade Commission, at the instance of the fabricators and distributors of reinforcing steel. Progress was made in the machine tool industry, and the subject aroused active interest in machinery and equipment associations, the National Electrical Manufacturers Association, the Steel Founders Society and the National Association of Manufacturers. Also, the live-and-let-live policy is reflected in a new "Code of Ethics for Buying and Selling," sponsored by the National Association of Purchasing Agents.

The strong feeling in construction circles against "bid peddling," as it is called, assumes forceful form in a campaign initiated by the subcontractors of the Associated Building Contractors of Toledo, Inc. A sticker is placed on each bid made by any member:

"This is our lowest and final price on the material listed below.

"We expect to confine our efforts to the upbuilding of our industry and have withdrawn from the auctioneering business. If you use our price in making up your bid, we would appreciate your business."

And on this platform, it is reported, every member of the organization maintains a firm stand.

Discussion of the subject was a prominent feature at a recent meeting of the executive board of the Associated General Contractors of America, held in Washington. Especially in view of the tremendous amount of Government and private construction in sight, a feeling prevailed that unfair competition must be stopped, for the advantage of the agencies or individuals offering the work, as well as for profit to the contractors. Despite the volume of work under way, in many lines, it was felt that contractors are not making fair and reasonable profits, and this failure was attributed largely to ruinous, unfair competition.

An era of fair and square dealing, however, is a hope in construction circles for the future.

As Mr. Nichols of the Allis-Chalmers Company has said, firm bidding cannot be applied 100 per cent for many reasons, some of which are obvious; but where applicable:

"Firm Bidding connotes stabilization in industry. It assures better business and cures the 'profitless prosperity' of so-called 'good times.' It reduces unemployment. It promotes mutual confidence in vendor and purchaser."

In the adoption of Firm Bidding as a general practice, industry and business take a great step forward on the highway toward business revival.

### Direct Taxation for All

TENTATIVE plans to spread the Federal tax burden more widely among the people, attributed to the Treasury Department in news despatches, indicate a step in the right direction. A general sales tax is not being considered, principally because "Treasury officials do not believe it would be acceptable to a majority in the Congress," the despatches add.

In a national population of 122,000,000, only 2 per cent paid a Federal income tax in 1930, and these 2,500,000 persons paid 47.5 per cent of the total national income tax receipts. The remaining 52.5 per cent of such taxes was paid by only 53 per cent of the 495,000 corporations which filed income returns.

This exemption of 98 per cent of the citizenry from directly contributing to the financial support of the Nation, whose benefits and protection and privileges they enjoy, is, we submit, of even greater actual evil than the concentration of the burden on the shoulders of a meager minority.

Outstanding in the harm arising from this wholesale discrimination is an extravagance in government expenditures which compels continuing increases in the amount of taxes to be paid. With only 2 per cent of the people personally interested, no brake is applied to the spending machinery in Congress. As long as a large number of citizens paid income taxes, even though about 2,000,000 paid less than \$25 a year, there was a marked tendency in the Congress to economize, as a member of the Congress has pointed out.

Every man, woman and child in the country pays Federal taxes indirectly, in one manner or another. As the ultimate result of direct taxation, they would pay less in money than they pay indirectly, largely because they would not permit the extravagance which they now view with complacency in erroneous belief that it is no concern of theirs.

### Employment in Manufacturing

AN interesting study of the shifts in occupational activities of our population is presented in an analysis by the National Industrial Conference Board of the number of workers engaged in manufacturing and mechanical pursuits.

The figures are based on the 1930 census, and while employment conditions have materially changed since then—with the total number at work smaller than a year ago, especially in the building trades, automobile manufacturing and the steel industry—nevertheless the analysis gives a fair idea of the various occupational groups and their relation to other groups in manufacturing and mechanical industries.

First indicating that manufacturing a little more than held its own in the rate at which gainful workers increased in number compared with growth in population and business, the Conference Board points out that there has been a considerable increase in the productivity of manufacturing processes, and that the growth in the number of workers becomes more significant therefore as evidence of increased demand for manufactured products.

Of course all branches of manufacturing did not share alike in the advance in the number of employed between 1910 and 1930. There were varying rates of growth within individual industries, and from the

Gainful Workers in Manufacturing and Mechanical Pursuits,  
1910 and 1930

Branch of Industry	Number		Increase or Decrease (-)
	1910	1930	
Building and hand trades....	3,410,819	*2,922,519	-14
Chemical and allied industries	122,132	621,050	408
Cigar and tobacco industry...	195,370	149,652	-23
Clay, glass and stone industries	368,394	372,173	1
Clothing industries .....	679,324	789,311	16
Bakeries .....	144,782	282,105	95
Slaughter and packing houses	88,360	164,383	86
Other food and allied industries	200,417	460,416	129
Automobile factories .....	105,758	640,161	505
Automobile repair shops.....	...	257,746	...
Blast furnaces and rolling mills	401,039	627,053	56
Other iron and steel industries	1,041,279	1,757,953	69
Metal industries except iron and steel .....	290,777	331,790	14
Shoe factories .....	217,667	271,329	24
Other leather industries.....	122,307	102,742	-16
Saw and planing mills.....	466,624	454,241	-2
Other wood working industries	331,370	405,695	22
Printing, publishing and en- graving .....	355,674	541,761	52
Paper and allied industries...	133,006	243,321	83
Cotton mills .....	358,834	422,401	17
Knitting mills .....	108,014	174,028	61
Silk mills .....	96,272	175,889	82
Woolen and worsted mills....	138,314	139,919	1
Other textile mills.....	197,558	275,194	39
Electrical machinery and sup- ply factories .....	88,915	378,514	325
Rubber factories .....	58,100	166,431	186
Specified industries including building and hand trades	6,310,287	10,205,258	61
Industries not specified.....	1,154,117	1,189,758	3

\* Includes 360,978 persons employed in independent hand trades in 1930.

John Wanamaker said "Advertising doesn't jerk. It pulls, but if stuck to, it will exert an irresistible force. Advertising is no game for the quitter."—*Printers' Ink*.

increase in employment it cannot be inferred there was a like increase in demand. As the Board states, in some industries the output per worker has changed little, in others it has greatly increased. Bearing on this, the accompanying tabulation gives some suggestive figures.

The general advance in gainful workers in manufacturing and mechanical industries was 32 per cent; in the building and hand trades there was a decided falling off in numbers, a fact that may be an indication of the increasing trend toward factory rather than workshop production.

Slow rates of growth in employment were found in the clay, stone, glass, clothing and metal industries, except iron and steel. Shoe factories, wood working industries other than saw and planing mills, cotton and woolen mills also made a small gain. The explanation is that in some of these industries employment of manufacturing processes has been very marked; in others there has been a shifting of consumer demand. Expansion of knitting and silk mills is in marked contrast to the growth of woolen, worsted and cotton mills. Food industries showed a greater increase than the average for other industries, due not so much to increased consumption as to the transfer to the factory of production formerly carried on in the home. During the past summer, however, especially in the canned goods industry, home canning has taken a tremendous jump. This is especially true in the Southern states. The figures covering the year 1930 are sufficient, as the Conference Board states, to give a broad view of the distribution of economic activities in the United States and the changes which have taken place since 1910.

## Our \$90,000,000,000 Opportunity

THE outstanding importance of our domestic market must not be lost sight of in the study of world economic conditions now claiming American attention. Not until the magnitude of our own market is fully recognized can ways and means for meeting its demand be properly framed. Not until we study such ways and means can the further potentialities of this market be even approximately discerned.

Signs of better business are multiplying. There is a distinct improvement in feeling, in both business and public morale. The daily newspapers and business periodicals contain more news of individual enterprises increasing their forces and expanding their hours of work.

The great American market is the most important field for us to consider and to cultivate. Only a small part of our trade, 5 per cent last year, was foreign. Our home market in normal times runs to about \$90,000,000,000 a year. The manufacturer who realizes this fact will be among those who first reap profit in the inevitable business revival. The man

who has confidence that American work and enterprise will pull this country out of the depression will find his faith well rewarded.

## Self Regulation of Industry

STABILIZATION of industry and employment is one of the basic needs of the times. Self regulation is being sought by industrial groups as a way to reach this objective. Naturally, unless a plan of stabilization is accepted by individual concerns in cooperation with other concerns in the same field it will fail. The stumblingblock to industry's effort to equalize production to demand is fear that concerted action by industrial groups may run counter to existing laws against restraint of trade.

It is well known that many concerns today are undermining themselves and their whole industry by selling below cost. Price fixing or price agreement is a direct violation of the anti-trust laws. Individual concerns, acting in cooperation with others, can work to improve efficiency and bring better conditions to the industry as a whole, so long as the group action does not limit or fix prices or interfere with free competition.

A suggestion was put before the American Institute of Steel Construction at its annual convention last week at White Sulphur Springs, the main object of which is to equalize the output of steel fabricating plants to construction demand, by a percentage allotment based on plant capacity and business done during the year by the industry as a whole. In this way it is hoped that not only will the industry in general be stabilized but that it will help also to better stabilize employment. The proposal, wholly tentative, was referred to the board of directors of the Institute for consideration and study as to its legality and feasibility.

The point is, here are individual concerns endeavoring to work together as a group that they may better protect themselves and their industry from ruinous practices which react upon their employes and in the end upon the public. There is an insistent demand on the part of industry generally for relief from obsolete and burdensome regulatory laws that under present conditions of stress prevent necessary steps being taken to accomplish what the situation clearly demands, both in regard to the stabilization of plant output and as to employment. Existing laws are so indefinite in their meaning that any cooperative plan by industry to restrict output is under suspicion.

In the field of agriculture there recently have been passed in several Southern states laws to compel a reduction in cotton acreage, with the direct intent of so curtailing production that an increased price for cotton will result. Self regulation of agriculture and industry by cooperative action to stabilize production and employment is essential, and if our anti-trust laws prevent this they should be modified to that extent.

# \$1,000,000 Paper Plant Expansion

UNDISMAYED by "the temporary business depression" and with "faith in the fundamental soundness of our country as strong as ever," the Champion Fibre Company, Canton, N. C., has started great development of its plant and contemplates still further plant expansion. A new paper machine is to be installed in a concrete and steel structure, and the company further plans a reinforced concrete beater room and an addition to the finishing room. The new machinery is estimated to cost \$500,000, and the development \$1,000,000.

The foundation for these developments may be found in the following statement from Reuben B. Robertson, president and general manager, to the MANUFACTURERS RECORD:

"We have long recognized the desirability of converting a larger percentage of our raw materials into the ultimate finished product. Recent pulp market conditions and several factors peculiar to our situation have now influenced us in a decision to expand our papermaking facilities. The decision having been made, we can see no reason for delay in executing our plans.

"Temporary business depression does not dismay us. Our faith in the fundamental soundness of our country is as strong as ever, and we are optimistic over the outlook for an early return of normal conditions.

"Expenditures in capital investments at this time are advisable from two standpoints: Commodity prices have reached their lowest level and more can be obtained for the money today than will be possible in the future; also, large expenditures at this time will alleviate the existing problems of unemployment and thereby hasten the

return of business activity which we are confident is not far distant."

Contract for the paper machine, to be delivered in the early spring, calls for the Fournier type, with 242-inch wire, designed to trim a sheet 220 inches in width. The Pusey & Jones Company, Wilmington, Del., will fill the order. For housing the machine, a building is planned of concrete construction, with steel superstructure and enclosing walls of brick, with floor space of 352 by 110 feet.

The company also contemplates the addition of a reinforced concrete beater room, 120 by 110 feet, to be four stories in height. The addition to the finishing room will be approximately 208 by 126 feet, three stories high. This will be of concrete, with steel superstructure.

The Morton C. Tuttle Co., Boston, Mass., has been awarded contract to construct three buildings, and work is already under way. When the project is well advanced about 300 men will be engaged on construction operations. W. R. Crute, plant engineer of the Champion Fibre Co., will supervise construction for the company.

The following additional contracts have been awarded in connection with the improvement program:

**Winders**—Moore & White Co., Philadelphia, Pa.

**Filters**—Lynchburg Foundry Co., Inc., Lynchburg, Va.

**Steel**—The Ingalls Iron Works Co., Birmingham, Ala.

**Timbers**—H. N. Saxton Co., Knoxville, Tenn. (from Great Southern Lumber Co.)

**Gravel**—B. & C. Lime Co., Asheville, N. C.

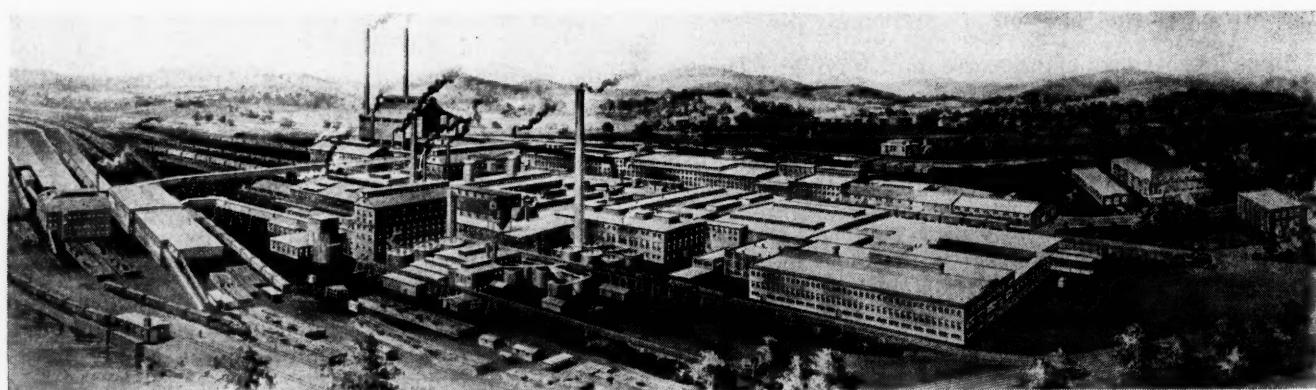
**Cement**—Canton Wholesale Supply Co. (from Cumberland Portland Cement Co.)

**Sand**—Marshall Sand Co., Marshall, N. C.

As originally designed, the plant included processes for the manufacture of soda pulp, sulphite pulp, container board and tannic acid. Subsequently, other processes and activities have been added for the recovery of by-products. These include the manufacture of sulphate or kraft pulp, bleaching liquor, liquid and solid caustic soda, the reclamation of lime wastes, the concentration of sulphite waste liquors, recovery of turpentine, etc. Two paper machines (154-inch trim) were installed a few years ago.

The plant now consumes daily, approximately: 60 standard carloads of pulpwood, 600 tons of coal, 120,000 pounds of lime, 35,000 pounds of sulphur, 100,000 pounds of salt, 12,000 kilowatts of electric power, 20,000 horsepower of steam energy, etc. The daily average production is approximately as follows: Chemical pulp, 300 tons; paper, 150 tons; board, 40 tons; tannic acid, 100 tons; solid caustic soda, 20 tons; adhesive extract, 20 tons; rosin soap and cleanser, 20 tons; turpentine, 300 gallons.

The company's organization is formed along modern lines, specialists of broad experience and technical training being in charge of the various departments. In the effort to attain mechanical and chemical efficiency, however, the human element has not been neglected. The property includes a completely equipped community center, operated under direction of the Young Men's Christian Association; a model workmen's village; a cooperative grocery; an emergency hospital and a welfare department.



Plant of the Champion Fibre Co., Canton, N. C.

# \$592,000,000 in Contracts Awarded

A TOTAL of more than \$592,000,000 is recorded as the valuation of contracts awarded for industrial, building, construction and general engineering projects during the first ten months of this year in the 16 Southern States, as compiled from reports published in the DAILY CONSTRUCTION BULLETIN and in the construction columns of the MANUFACTURERS RECORD.

This figure compares with \$814,000,000, representing awards covering similar projects in the corresponding period of 1930, when an all-time high record was established for building in the South, largely because of the huge aggregate expenditure for a number of great natural gas pipeline systems from Southern fields to distant industrial centers.

The really notable amount of work represented by construction awards, January to October inclusive this year, is forcibly illustrated by comparison with the work undertaken in 1921, 1922, 1923 and 1924. In 1921, when a revival of construction activity began in the South, the total awards amounted to \$330,000,000. In the following year awards climbed to \$555,000,000, holding practically steady in 1923 and amounting then to \$558,000,000. In 1924 a further gain was registered, the valuation of construction awards reaching \$676,000,000. Thus, the ten-month total this year compares favorably with the yearly totals in a period when construction was going forward with great strides to make up for the slack created by the lull in building, during and immediately following the war period.

The sharp decrease in building costs in the past few months should not be overlooked in comparing building figures with preceding years, if one is to gauge properly the volume of work under way and projected. It is variously estimated by competent authorities that construction costs now are 20 to 33 per cent lower than they were a year ago; so that, practically speaking, 66 cents will today buy a construction unit that would have cost \$1.00 a year ago. That there is in sight a large amount of private and industrial building likely to be undertaken also should not be overlooked, but many of those who plan to go forward with work are now marking time, wait-

ing to see which way prices will swing. If the tendency is up, and there has already been a stiffening in the prices of some commodities, it may well be that a big volume of new building work will be let to contract during the winter months and the early spring.

The South is particularly fortunate in being able to carry on its building operations to distinct advantage the year round; and, whatever the general trend, the indications are that in this section the construction volume will be maintained at about its present level for some months yet.

For September and October, a total of approximately \$100,000,000 is represented in construction awards providing for enterprises in wide variety in all parts of the South. Road, paving and bridge projects for which contracts were let during the last two months have a total aggregate valuation exceeding \$43,000,000. Also in September and October miscellaneous construction awards, including such developments as public garages, motor bus and truck terminals,

#### *Southern Activity in Building and Industry, October, 1931*

	Contracts Awarded	Contracts to be Awarded
Apartment houses and hotels .....	\$1,108,000	\$170,000
Association and fraternal buildings....	70,000	195,000
Bank and office buildings .....	369,000	3,000,000
Church buildings....	390,000	702,000
City, county, government and state buildings .....	7,713,000	1,950,000
Dwellings .....	1,297,000	467,000
Miscellaneous .....	12,019,000	7,739,000
Road, paving and bridge projects....	16,424,000	13,493,000
School buildings....	2,463,000	1,403,000
Sewers, drainage and waterworks .....	2,798,000	1,446,000
Store buildings .....	700,000	150,000
<b>Totals .....</b>	<b>\$45,351,000</b>	<b>\$30,715,000</b>
October, 1930 .....	\$65,658,500	\$98,602,500
October, 1929 .....	53,711,000	
October, 1928 .....	47,913,500	
October, 1927 .....	46,257,500	

#### *Contracts Awarded and Proposed, by Months, for 1931*

	Awarded	Proposed
January .....	\$67,038,000	\$70,704,000
February .....	43,167,000	118,005,000
March .....	68,987,000	88,278,000
April .....	88,884,000	97,502,000
May .....	69,047,000	88,438,000
June .....	47,385,000	79,853,000
July .....	66,633,000	80,047,000
August .....	41,613,000	36,832,000
September .....	54,556,000	21,371,000
October .....	45,351,000	\$30,715,000
Total 10 months....	\$592,661,000	\$711,745,000

industrial plants, piers, warehouses, hydro and steam electric plants, and a diversity of other work called for an expenditure of \$26,000,000. City, county, government and state building activity called for an investment of \$13,000,000. School buildings let to contract in September and October represented an investment of more than \$4,250,000. Dwelling construction, including awards for individual projects costing \$10,000 each, and up, and omitting those of lower valuation due to space limitations, amounted to \$3,500,000.

#### \$1,000,000 Power Extensions

Kenova, W. Va.—The Appalachian Electric Power Co., Charleston, subsidiary of the American Gas & Electric Co., New York, plans continued improvements and extensions to its steam generating plants, including extensions and improvements at Kenova and in this territory to cost about \$1,000,000, according to George N. Tidd, president of both companies. While details of the improvements to be made here were not announced, it is understood that betterments will be started at once and will be continued over a period of 18 months.

#### \$2,000,000 Building Group

Nashville, Tenn.—General contract to erect a \$600,000 office building and garage here, which will be a part of a \$2,000,000 office and theater group to be erected by Warner Bros. Pictures, Inc. New York, has been awarded to the Sumner Construction Co. Nashville, and G. A. Zimmerman, New York. The office building will be 12 stories, faced with white limestone and trimmed with dark granite. It will be equipped with signal-controlled elevators. The garage, to accommodate 200 cars, will be connected directly with the office building. Excavation and foundation contract was awarded several months ago to the Foster & Creighton Co., Nashville, and contract for structural steel to the Nashville Bridge Co. Contract for the theater has not yet been awarded. Marr & Holman, Nashville, are the architects.

# Double Tracking on the Missouri Pacific

A \$25,000,000 project involving double tracking, realigning and installation of modern signal apparatus on its 126-mile main line west of St. Louis to Cole Junction, at Jefferson City, Mo., has been practically completed by the Missouri Pacific Lines. Instituted in 1925 when it was realized that the existing single track had reached its economic limit, this big improvement program was found necessary by President L. W. Baldwin, in order to keep abreast of transportation needs of the Middle West.

A five-year plan was adopted, providing for 13 construction units, preference being given to those units where train



A Typical Improved Alignment West of New Haven, Mo. At Right, the Abandoned Single-Track Roadbed



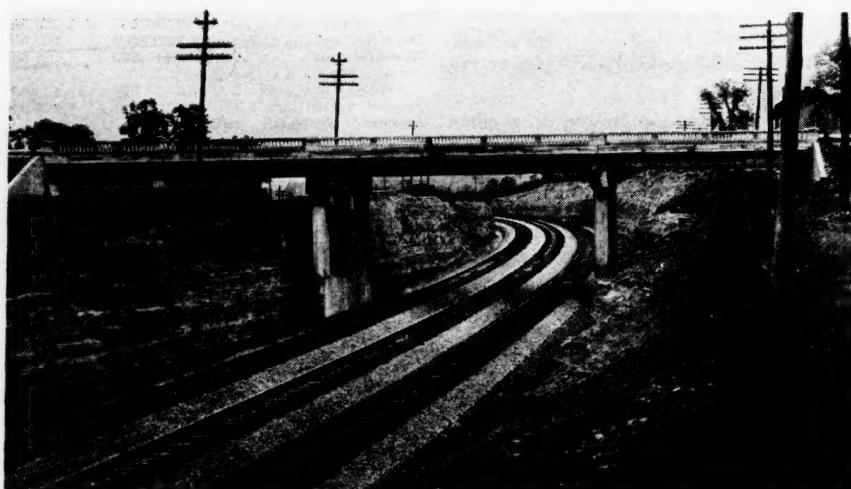
Entrance to 1580-Foot Concrete Lined Tunnel Under Town of Gray Summit, Mo.

congestion indicated urgent need. Actual work was started in the spring of 1925 and carried on without interruption to virtual completion early in 1931, when the entire line had been double-tracked except for a short stretch through two tunnels on the western outskirts of St. Louis and two single track bridges over the Osage and Gasconade rivers.

An outstanding difficulty confronting the engineers was correction of the old alignment, which involved elimination or reduction of curves to less than three degrees, and revision of grades to three-tenths of one per cent on a line constructed 80 years ago when it was the practice to keep grading expense at a minimum by following contours closely. These corrections added substantially to the cost of double-tracking and involved

intricate problems in handling train movements, which often were as numerous as 60 in 24 hours. The result is a shortening in running time between St. Louis and Kansas City and a pronounced reduction in operating expenses. Elimination of necessity for engine helper service, and increase in train loads were two factors involved.

Double-tracking the 76 miles of line in the Missouri Valley between Boles and Jefferson City required no grade revision or track elevation for protection against flood waters, although difficulties were presented to selection of the improved alignment and in construction. The original location for most of the distance



Looking East Through Bridge of U. S. Highway 66, Near Eureka. Old Main Track, Now Glencoe Branch, Is Third Track at Left



Bridge Over Moreau River in New Location East of Jefferson City

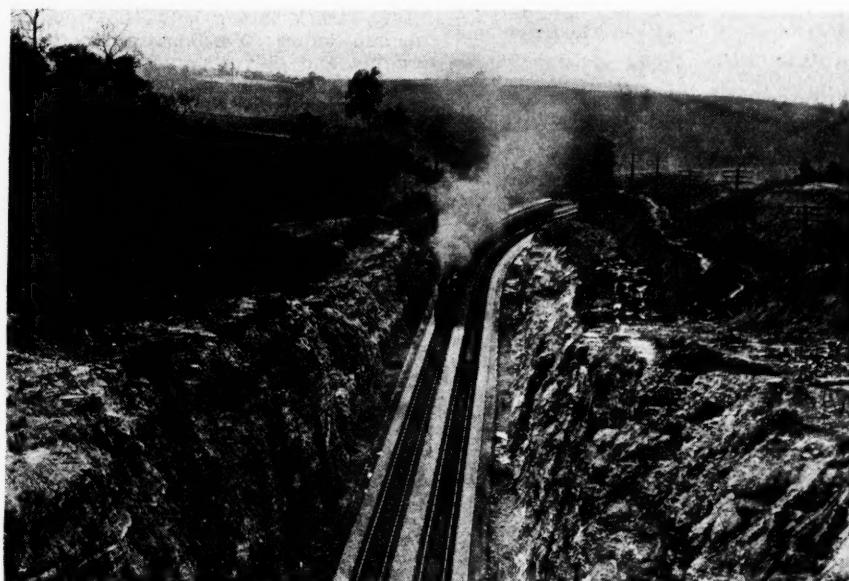
lay on a narrow shelf, following the valley contours between river bank and rock bluffs rising in some places 200 feet above the track. Heavy side cutting was at times necessary. At other locations, bluffs of troublesome debris encountered on the upper side of the track and the alluvial river bottom afforded only an unstable foundation for the roadbed.

At Gray Summit the work covered 17 miles of second track between Allenton in the Meramec valley to a point in the Missouri valley about a mile west of Boles. It was here necessary to leave the original location for a distance of 12 miles and build a new double-track line to the south, between Pacific and Boles. The rough country made construction heavy and expensive, with unusual engineering problems.

Two concrete-lined double track tunnels were built, one of 1580 feet passing under the town of Gray Summit. The

other, 552 feet long, is four miles west, at Labadie. At its highest point the track is 85 feet lower than the original location. The gradient is uniformly three-tenths of one per cent, compensated for curvature, except for a short temporary five-tenths per cent compensated grade, immediately west of Pacific, against the lighter west-bound traffic. This grade can be reduced readily when traffic requires such reduction. Selection on this part of the line allows also for reduction of the grade as part of a future track elevation and grader crossing elimination in the town of Pacific. A saving of one mile was accomplished between Pacific and Boles.

Heavy and difficult work was encountered in double tracking the 12 miles from Lake Hill, through Valley Park to Eureka on the west. Between Valley



Looking West From Portal of Labadie Tunnel Through Deep Rock Approach Cut on New Double Track Line Between Pacific and Boles



"Color Light" Signals, for Train Operation on Each Track in Either Direction.  
This Rock Cut Is on the Line Between Jedburg and Eureka

Park and Eureka the track followed the Meramec River and was supported on a narrow shelf between the bank and high rock bluffs. The six miles from Valley Park to Jedburg presented little opportunity to improve alignment other than elimination of unnecessary curvature and reduction of curves to a practicable limit. Two concrete and steel bridges, however, made it possible to cut two miles from the six-mile distance between Jedburg and Eureka. The old line, which follows a wide bend of the river, has been retained as a branch for serving local communities and several industries.

Reduction of the one per cent grade east toward Kirkwood from Valley Park, where the line leaves the Meramec, necessitated elevation of the track by 20 feet through the town of Valley Park. Two intersecting streets were sent

through underpasses, and concrete walls were built to retain the track embankment through the business section. Provision was made for connection without change into a future low-grade line. This will leave the present track at Lake Hill and diverge southward around the St. Louis switching district to the Mississippi at Carondelet where the Missouri Pacific maintains a ferry to the Illinois shore. Location of this line is planned to connect with a future bridge over the Mississippi to replace the car ferry.

The many corrections in alignment shorten the distance from St. Louis to the West by 3.17 miles; reductions in curvature, with the 102.79 miles of new second track constructed, amount to a total of 3148 degrees of central angle, or nearly nine complete circles. Two new tracks placed in open cuts in the territory along the Missouri between Boles and Jefferson City allowed abandonment of two tunnels.

Prior to 1925 the lines were equipped with straight overlap semaphore signals. The plan for second track construction inaugurated in that year, however, provided complete signal protection for operation of trains in both directions on either of the two main lines. Signal installations kept pace with track work, controlling signals being put into service as fast as the second main line was opened to traffic. Modern "color light" signals were used as late as 1928. Wherever conditions did not require continuous service of operators at the ends of double track, the junction switches were remote controlled from the nearest telegraph office.

In 1929, business moving between St. Louis and Jefferson City had so increased as to warrant installation of a

system of centralized traffic control between Kirkwood and Washington, Mo., where, in addition to through traffic, local and suburban trains are handled. This system allows movement on either track in either direction by signal indication without use of train orders. Control point for the entire stretch is at Pacific, 35 miles west of St. Louis. One operator controls not only the signals for movement of all trains in the territory, but by remote control handles switches at both ends, as well as at double crossovers at four intermediate locations.

The following were engaged in construction operations:

1925 Program: Winston Brothers Co., Minneapolis, Minn.—grading, bridges and culverts, and track laying and ballasting.

1926 Program: List Construction Co., Kansas City, Mo.—grading, bridges and culverts between Washington and Berger; Bilhorn, Bower and Peters, Inc., St. Louis,—track laying between Washington and Berger; Winston Brothers Co.—grading and culverts and track work, between Osage and Jefferson City; railroad forces built the bridge over the Moreau River west of Osage.

1927 Program: Winston Brothers Co.,—grading, bridges, culverts and portion of track work, except DuBois Creek bridge, which was built by railroad forces; Bilhorn, Bower and Peters, Inc.,—remainder of track work.

1928 Program: J. A. Kreis & Sons, Inc., Knoxville, Tenn.,—grading, tunnels, bridges and culverts; track was laid and ballasted by railroad forces.

1929 Program: Winston Brothers Co.,—grading, bridges, culverts and track work between Lake Hill and Jedburg; Hedges-Weeks Construction Co., Springfield, Mo.,—bridges and retaining walls within track elevation at Valley Park; List Construction Co.,—grading, bridges and culverts on line between Jedburg and Eureka; Frazier Davis Construction Co., St. Louis,—two bridges over Meramec River, line between Jedburg and Eureka; track work, railroad forces.

### Growing Gladioli in Florida

St. Petersburg, Fla.—Pinellas County floriculturists will grow approximately 6,000,000 gladioli this winter, according to James R. Shoecraft, known here as the "King of Gladioli of Pinellas County." This year Mr. Shoecraft is setting out 500,000 bulbs, placing about 60,000 to 70,000 to the acre. He makes the statement that a hothouse in a northern state, representing an investment of \$50,000, will be able to turn out about one-third as many flowers as can be grown on one acre of land here.

Flowers are shipped from Pinellas Park one night and reach New York the next night. With the establishment of airplane freight service, looked for in

the near future, Florida flowers will reach New York within 12 hours after cutting.

### \$5,000,000 Tennessee Bonds

Nashville, Tenn.—Bids will be opened November 10 by the State Funding Board for the purchase of \$5,000,000 state bonds to take up a like amount of deficit notes authorized by the 1929 Legislature. Proposals will be invited on two types of bonds—one type to mature in December, '1933, and the other type to mature serially in equal installments from December 1, 1933, and ending in 1951. The rate of interest is not to exceed 5 per cent.

## Better Business Is Reported

Indications of improvement in business conditions were reported at a meeting of the National Association of Manufacturers, in New York City, at the close of last week. Summarized, the features were:

Better business than last fall is reported by 8 per cent of the companies, compared with 5 per cent last year. Eighteen per cent held the same business, compared with 14 per cent last year.

Employment shows a slight increase over October, 1930. Five per cent of the companies increased their forces, compared with 3 per cent last year. Thirty-one per cent have held the same personnel compared with 29 per cent last year.

Wages have held their own or been bettered in 54 per cent of the companies. Decreased production, sales and prices strike a general average nearly three times that of wage reductions.

Inventories are the lowest in years, indicating that when general buying is increased, plants will be compelled to enlarge forces to speed up production.

Among the individual industry improvements reported by 800 concerns in 26 lines of business were the following: Automobile accessories, 14 per cent; chemicals, 11 per cent; electrical supplies, 18 per cent; leather, 27 per cent; paper and pulp, 14 per cent; rubber, 25 per cent; stationery and printing, 9 per cent; textiles, 17 per cent; miscellaneous, 9 per cent. Fifty-eight per cent of the firms said they considered prospects for the winter excellent, or good or fair.

The necessity for American industry to solve its own problems in employment and other business factors was stressed by President John E. Edgerton, who said, in part:

"Mere resolutions and talking about them are not going to solve our problems. Government can't solve them. But it is certain that if they are not solved, or if progress is not made in that direction by voluntary action on the part of the responsible, government is going to keep attempting to solve them, however big a mess they make of the job."

"The sine qua non of a successful voluntary effort is a sustained will to succeed, and that cannot come except out of an interest enlightened by faith and driven by courage, faith in the God of our fathers and in the institutions established by them under the inspirations of their own faith."

The subject of employment was discussed by James W. Hook, president of the Geometric Tool Company, and other speakers.

# Steel Fabricators Plan

## Stabilization

White Sulphur Springs, W. Va.

November 2.

The annual meeting of the American Institute of Steel Construction held at White Sulphur Springs last week was, in many respects, probably the most important meeting the organization has ever held. Members from New England to the Pacific Coast gathered to discuss the major problems of stabilization and price-cutting, which have been affecting all industry and which are especially serious in iron and steel lines.

The spirit of the meeting evidenced intent earnestness and determination to evolve a method or plan which would bring order out of what was described as a chaotic condition and put an end to the destructive course of the inconsiderate price cutter.

As expressed in these columns recently through letters from various members of the Institute, unless some change occurs quickly and decisively in the cut-throat competition followed by some, as one member stated it, disaster to an entire and vital industry will result. And, by the way, the publication by the MANUFACTURERS RECORD of the letters mentioned and its position throughout the depression, not only in regard to price-cutting but on such matters as wage reductions, was referred to in rather flattering terms.

The plan presented to the meeting by a committee of the members contemplates equalizing the output of steel fabricating plants to construction demand by a percentage allotment based on plant capacity and business done during the year by districts and by the industry as a whole. It was referred to the Board of Directors for consideration and study as to its legality and feasibility. The idea was presented as a tentative suggestion, with full recognition that changes very probably would have to be made in some of the details before being put in final working order, but based on the very full discussion which took place, it is clear that the membership of the Institute is virtually unanimous in decrying the practices that will work irreparable harm, if kept up.

The papers read were unusually in-

teresting and thorough in their presentation of subjects of importance to steel fabricators. These papers were referred to more particularly in last week's edition of this publication. The tone throughout expressed confidence in the future and the belief that the worst of the depression has been passed. The spirit manifested and the purpose to adopt a live-and-let-live attitude in future efforts to obtain business will, as stated at the outset, probably cause this meeting to rank as the most important that the Institute has held.

It was expected that James A. Farrell, president of the United States Steel Corporation, would address the banquet on Thursday evening, but he was detained in Washington before the Senate Committee considering the question of an Economic Relations Commission, and did not arrive until the last day of the session. Mr. Farrell took occasion, however, to express to the fabricators the thought that people had reason to look to the future with hope, because undoubtedly there is evidence of improvement which although not extremely well-marked is nevertheless real, and he believed it would continue steadily. He referred to a number of large construction jobs which will mean orders for the steel mills and contracts for the steel fabricators. He also alluded to the damage suffered from unfair competition.

At the last day's session, R. I. Ingalls, president of the Ingalls Iron Works Co., Birmingham, presented a paper on "The Relation of Cost Accounting to Profitable Operation." In referring to certain excessive costs, he said:

"The cost of doing business is tremendously increased through carelessness of employes. I do not refer particularly to errors in judgment, but to sins of commission and omission, resulting entirely from carelessness.

"Since our companies have been selling materials at less than cost, in some cases in an effort to keep our people employed, we have taken the position that mistakes, resulting from rank carelessness, must be paid for by the offender. I believe it is having a salutary effect and that in the end we will be thanked for adopting this rule."

Mr. Ingalls proposed that Federal corporation income taxes should be included

in the cost of doing business and not borne by capital, and said:

"Politicians argue that income tax in the final analysis is charged to the consumer, but it is my personal belief that income taxes come entirely from profits, which rightfully belong to stockholders, because we have not considered or included these taxes as a part of our cost."

It was decided to hold the next convention at White Sulphur Springs.

### \$3,625,000 University Buildings

Austin, Tex.—Consulting engineers have been announced by the Board of Regents of the University of Texas for 8 buildings to be erected by the University at an estimated cost of \$3,625,000, and for which plans are now being prepared. Matthews & Kenan, San Antonio, will serve as consulting engineers for a \$350,000 engineering building, \$350,000 architecture building and \$625,000 Students' Union group. Frank P. Chappell, Dallas, is the consulting engineer for a \$250,000 home economics building; R. L. Rolfe, Dallas, for a \$300,000 geology building and \$200,000 men's dormitory, and R. O. Jameson, Dallas, for a \$1,000,000 library building and a \$450,000 physics building. Herbert M. Greene and La Roche & Dahl, both of Dallas, are the architects, and Paul P. Cret, Philadelphia, Pa., consulting architect.

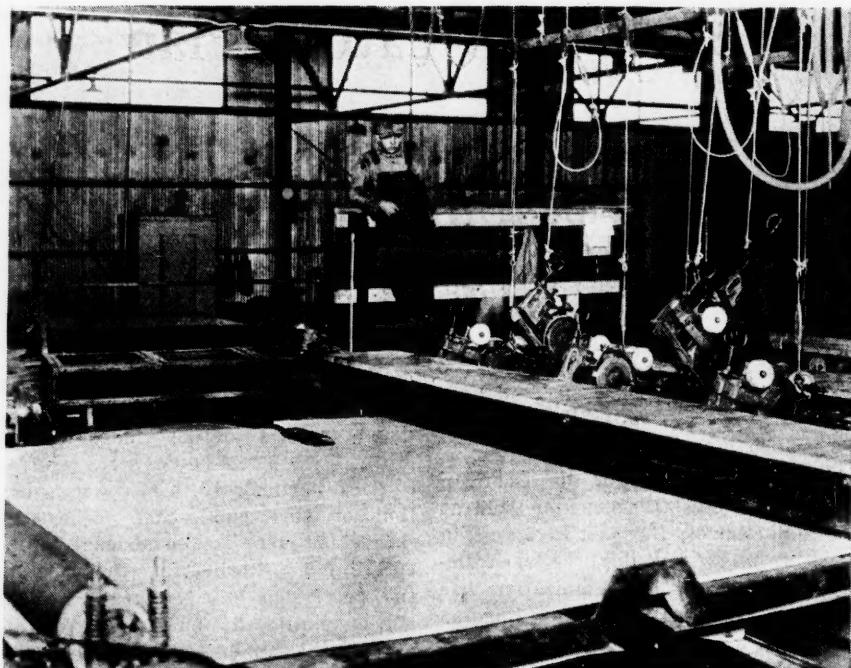
### \$300,000 Radio Station

One of the world's largest and one of the most modern broadcasting stations on the American continent has just been dedicated in the town of Villa Acuna, Coahuila, Mexico, across the Rio Grande River from Del Rio, Texas. According to A. C. Easterling, secretary and manager of the Del Rio (Texas) Chamber of Commerce, this radio station is the result of an organization perfected through the cooperation of the Del Rio and Villa Acuna chambers of commerce. It is a 75,000-watt station, and includes two 300-foot towers, modern studio and a variety of special equipment representing a total expenditure of approximately \$300,000.

### Steel for Air Field Buildings

San Antonio, Tex.—The Ingalls Iron Works Co., Birmingham, Ala., has a contract for approximately 2000 tons of fabricated structural steel for the engineering shops, boiler house and auxiliary improvements under way at Duncan Field, near this city. The A. J. Rife Construction Co., Dallas, is the general contractor.

# Agricultural Wastes and Industry



An Ingenious Machine Cuts Big Boards of Celotex as they Emerge from Drying Ovens, First Lengthwise Into Three 4-Foot Widths, then Across, Into Lengths Desired

MODERN methods for utilization of agricultural waste affect many industries. Cottonseed hulls are one of the least valuable by-products of cotton, yet a food for stock is produced from this material. Cottonseed hulls have been employed for production of wood flour, and by acid hydrolysis reducing sugars have been produced. Recently, xylose, a five-carbon sugar, has been produced from cottonseed hulls by the combined efforts of the Bureau of Standards, the Swann Corporation, the University of Alabama and the Alabama

By  
C. A. BASORE

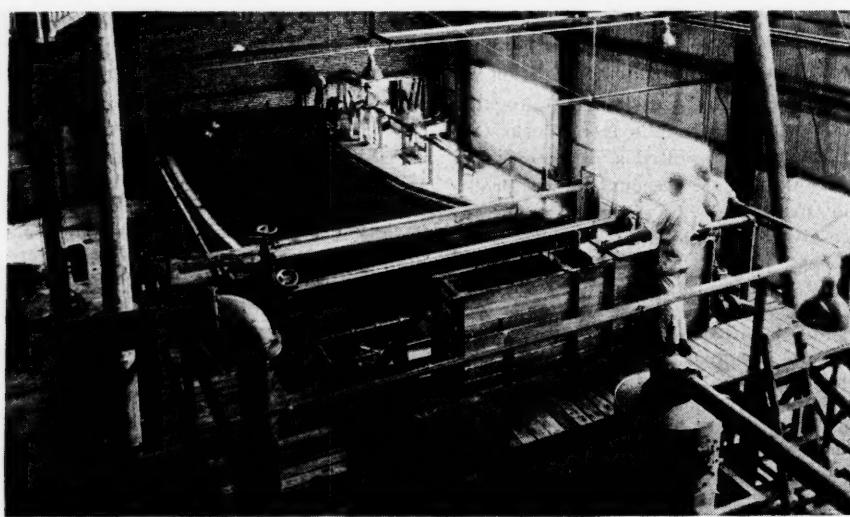
Professor of Chemical Engineering,  
Alabama Polytechnic Institute, Auburn

Polytechnic Institute. It is believed that a number of uses can be developed for this product. After extraction of

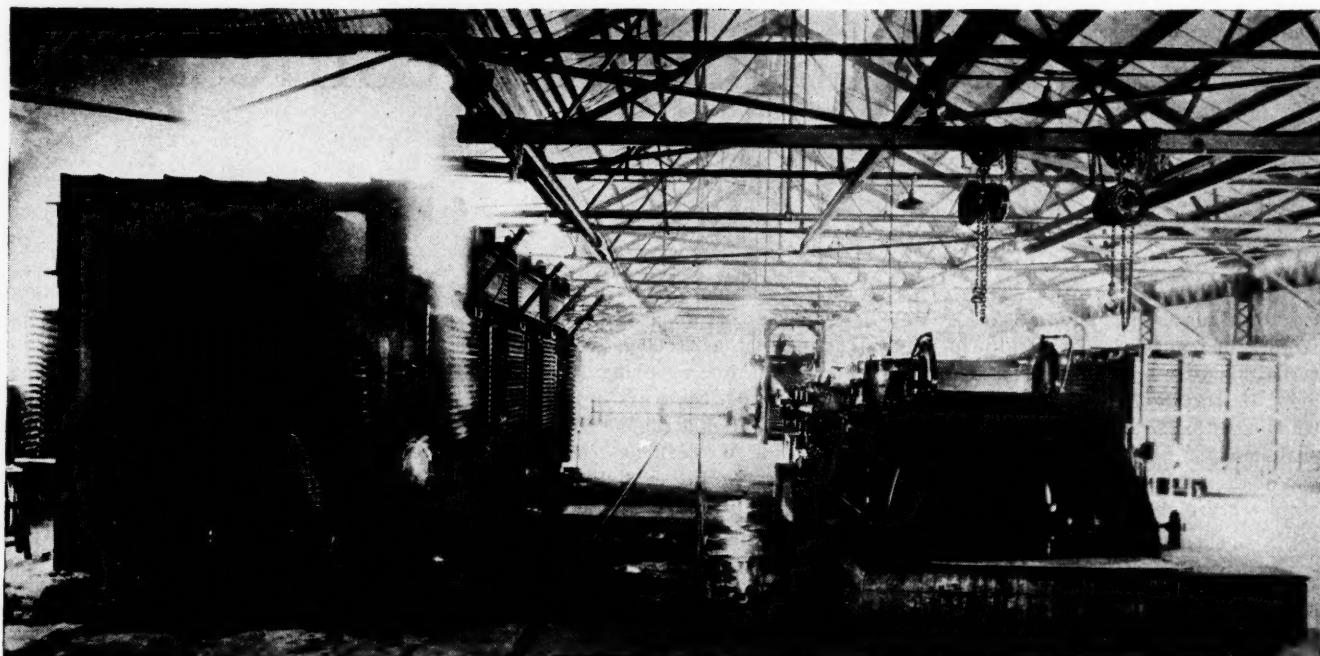
the xylose, about 65 per cent of the weight of the hulls remains as a brown carbonaceous material. A method has been developed for conversion of this waste into a high-grade decolorizing carbon.

Several possible uses for cornstalks and corncobs have been suggested, including the production of alpha-cellulose and furfural, the latter an organic compound with a number of uses. The suggested commercial utilization of cornstalks is along two different lines; the first includes applications which can utilize the entire stalk as crude fiber, such as wall board, artificial lumber and cornstalk flour; the second consists of the conversion of cornstalk cellulose into paper, rayon, nitro-cellulose and the like. Considerable progress has been made along both lines. Maizolith has been made from cornstalks. This material is suitable for electrical insulation and as a hard rubber substitute. Products made from cornstalks include alpha-cellulose, building blocks, cellulose nitrate and acetate, cellulith, charcoal, gun-cotton, lumber substitute, oxalic acid, paper, rayon, viscose and xylose.

Likewise, corncobs have yielded many products of value. Furfural has been recovered from corncobs by several processes, the yield appearing to be from 6 to 10 per cent. However, work at Iowa State University indicates that a yield of 22 per cent of furfural or furfural derivatives is possible. Oxalic acid has been recovered from cobs by several processes. Acetic acid is a by-product.



In Armstrong-Newport Company Plant, the Wet Saw in Center Background Cuts the Continuous Sheet of Temlok Board Into 16-Foot Lengths for Better Handling and Dryer Operation



At Left is Battery of Flat Bed, Steam Heated, Hydraulic Presses in Masonite Plant, Capable of Exerting Combined Pressure of Over 8,000 Pounds

The yield of oxalic acid is 12.59 per cent to 58.26 per cent, while the yield of acetic acid is 16.09 per cent to 38.39 per cent. Under one condition, the yield of oxalic acid is 72.7 per cent. Oxalic acid has a variety of uses.

Corncobs, like other cellulose-bearing materials, can be destructively distilled and the cobs are claimed to have many advantages over wood for this purpose. Products recovered in this way are gas, alcohol, acetic acid, tar and charcoal. Other products derived from corncobs include xylose, reducing sugars, alcohol, synthetic plastics made by treating the cobs with phenol, paper pulp, cardboard, the substitution of ground cobs for cork in manufacture of linoleum, wood flour substitute, punk, plaster board and decolorizing carbon. The production of resins, oxalic acid, furfural and the destructive distillation of the cobs is considered to have especially interesting possibilities.

Waste wood is often an agricultural waste. The ordinary uses are well known. The outstanding development of recent years for utilization of the coarser forms has been the Mason process in which the waste wood is subjected to a steam pressure of 1,000 pounds per square inch, and on sudden release of the pressure the wood is converted into a moss-like mass, which is pressed into sheets. Apparently this method has been very successful.

Waste straw from oats, rye, wheat and rice has been utilized in various ways. The Stewart Inso Board Co., St. Joseph, Mo., now produces a straw board.

Bagasse is sometimes an agricultural

waste. In recent years a good grade fiber board has been produced from this material, and the board is used as a sound-absorbing material in offices, factories, auditoriums and theaters. The Celotex Co. was a pioneer in the use of bagasse for manufacture of building and wall board.

Even peanut hulls have been utilized, pure cellulose having been recovered. Possible utilization of this cellulose includes its conversion into paper, rayon and nitrated cellulose.

In recent years attention has been di-

rected toward the decomposition of cellulose, by bacterial action, into products of value. Purified cultures have been used, the end products being acetic acid, lactic acid, ethyl alcohol, methane, hydrogen and carbon dioxide. Also, fermentation has been employed, produced by a culture obtained from horse manure. The products were acetic acid, ethyl alcohol, carbon dioxide, and small amounts of butyric acid and hydrogen.

The success of these processes would seem to offer interesting possibilities for the utilization of agricultural waste.



Rack Truck to Carry Twenty 4-Inch by 12-Inch Boards from the Fourdriner to the Hydraulic Presses

# Signs of Better Business

CHESAPEAKE & POTOMAC TELEPHONE Co., Baltimore, through its board of directors has authorized capital expenditures this year for new plant and equipment in Maryland totaling over \$4,450,000, according to Frederick J. Irish, general manager. Underground conduit and cable extensions in many sections of the state feature the expansion program.

UNIT STOVE & FURNACE Co., Birmingham, is running its factories on full time, with orders in hand and in sight to warrant active operation for 60 days, E. E. Leopold announces. "There is no denying that a gradual improvement in business is starting in," he said. "We are buying pig iron and other material, and are shipping two carloads of stoves weekly."

NATIONAL LUMBER AND MANUFACTURERS ASSOCIATION for the week ending October 17 reports orders received by 811 leading hardwood and softwood mills as approximately 2 per cent above production. Shipments of these mills were 6 per cent above their production, which amounted to 173,869,000 feet for the week.

ELECTRIC POWER SALES by subsidiaries of the Seaboard Public Service Company, operating in six South Atlantic states, showed a 30 per cent gain in domestic consumer consumption for the first nine months of 1931 compared with the corresponding period of 1930. Other Seaboard increases for other classes of service ranged from 5.8 per cent to 12.5 per cent.

TUPELO GARMENT Co., Tupelo, Miss., will shortly occupy a new two-story building in which 100 new machines in addition to the present equipment will be installed. An order for 16,000 dozen shirts from one buyer is expected to be filled by April.

CONSTRUCTION business is definitely improving, according to the expressed opinion of V. P. Loftis, manager of the Carolinas branch of the Associated General Contractors of America at Charlotte, N. C., after a trip through the states. If the public works program talked of is consummated, conditions should be much better before many months have passed, in the belief of Mr. Loftis.

NORFOLK AND WESTERN RAILWAY COMPANY will spend about \$225,000 for construction of ten 22,000-gallon locomotive tenders and for repairing five hundred 50½-ton hopper coal cars in its Roanoke, Va., shops. For a number of years the Norfolk and Western has carried on an extensive program of building and rebuilding equipment in its Roanoke shops. Orders for equipment placed with the local shops during 1930 and 1931 include 20 giant Mallet locomotives, 1000 all-steel box cars, thirty 18,000-gallon tenders and the rebuilding of 950 all-steel 57½-ton hopper coal cars.

MORETTI-HARRAH MARBLE QUARRIES, Sylacauga, Ala., announce receipt of an order for 50 cars of marble to be used in construction of the Dime Savings Bank Building being erected in Brooklyn, N. Y., the order coming through Tompkins-Kirol Marble Co., Knoxville, Tenn. The material will be used in construction of the exterior of the building, to be one of the most attractive structures in Brooklyn. Other marble companies of the Sylacauga section are filling large orders, and some of the finest buildings being erected in eastern cities are using Alabama white marble.

CHESAPEAKE & OHIO RAILWAY Co. coal dumpings at Newport News, Va., are running about 5 per cent above last year. The October pickup was more than seasonal. The road has also set a new all-time record at its Toledo, Ohio, piers.

CARLING TILE COMPANY, Macon, Ga., is operating full time, with some departments working 24 hours daily, according to Price Hertz, president. The plant has 104 men on the payroll.

R. J. REYNOLDS TOBACCO Co., has added 200 additional workers to its leaf department at Richmond, Va. A large portion of the company's recent purchases has been consigned to Richmond for treatment before the tobacco is made into finished products.

OSCEOLA MILLS, one of the units of Textiles, Inc., Gastonia, N. C., is being thoroughly remodeled. The present equipment is to be dismantled and all the equipment from the Helen Yarn Mills is to be installed.

THE MISSISSIPPI RIVER COMMISSION reports a new high record during September for levee construction work, 11,000,000 cubic yards of material having been placed during the month. This exceeds August by 1,285,000 cubic yards and the monthly average of the record-breaking fiscal year ending June 30 by over 3,360,000 cubic yards.

HOMESTEAD STEEL WORKS, Homestead, Pa., has resumed operation of six plate mills and the open hearth department, raising the rate of operation to 50 per cent of capacity. This means that hundreds of men who have been working only a day or two weekly will have steady employment.

EUREKA MILLS, Englewood, Tenn., are employing all workers laid off during the past few months, and working full time day and night to fill orders for knitted underwear. The Englewood Manufacturing Co., has received a number of orders for misses' and children's hosiery, and former operatives will be re-employed for full time for an indefinite period.

CAROLINA ABSORBENT COTTON Co., Charlotte, N. C., a division of the Barnhardt Manufacturing Co., has completed the work of doubling its plant, and B. R. Gibson in charge of production announces that more orders are on hand than at any time for the past 24 months. This is one of the few concerns in the South producing finished packages of absorbent cotton. Two carloads, or approximately 50,000 individual packages are turned out weekly.

KOLOPRINT CORPORATION, CHATTANOOGA, TENN., which went into production in October, is negotiating with New York interests for a large order for colors, according to Dr. Frederick Shurley, vice president, who perfected the processes used by the company.

KATTERMAN & MITCHELL, Paterson, N. J., will establish a silk mill at Lyons, S. C., to employ 140 persons in day and night operations.

SALANT & SALANT, Dresden, Tenn., have installed machinery in a new shirt factory to provide employment for 200 in the production of men's work shirts.

# Freight Rate Differential Defended

THE basis for domestic rates is primarily mileage and density of traffic, but export and import rates, other than to and from key ports, are governed largely by port equalization and, therefore, must be elastic.

Fundamentally, the theory or underlying principle of export rates is that they are the same as domestic rates, except: (1) when it is necessary to make lower than domestic rates on certain commodities as a factor in meeting foreign competition; (2) as a factor in equalizing rates through competing ports, and (3) to enable manufacturers of similar articles in widely separated groups to compete with each other on a fairly related basis.

The establishment of export and import rates between what is commonly known as Central Freight Association or midwest territory and Southern ports has been the subject of more or less controversy for the last 25 years; therefore, this discussion will be confined to this specific adjustment, which may be regarded, in part, as an extension of, or a companion piece to, the widely known and still longer controversy over the port differential adjustment to and from the same territory and North Atlantic ports. Like its prototype, the Southern ports adjustment has become a national question.

The territory primarily involved is west of the Ohio-Pennsylvania State Line and east of the Mississippi River and from the Ohio River to the Great Lakes. Under normal conditions shipments are made to and from all parts of the world, including movement through the Suez and Panama Canals. This world wide trade calls for the most economical use of every available port outlet coupled with the ocean services offering at each group of ports.

At present this central territory can utilize Canadian, North Atlantic, South Atlantic, Gulf and Pacific ports, with rail connections to the contiguous foreign countries of Canada and Mexico, and with car ferry service from Key West and New Orleans to Cuba.

The occasion for the discussion of this

\*From an address by Mr. McKellar before the Middle West Foreign Trade Conference held last week at Louisville.

By

R. L. MCKELLAR

Foreign Freight Traffic Manager,  
Southern Railway System, Louisville, Ky.\*

to territory on and west of the Chicago-Indianapolis-Cincinnati line.

In order to make a more complete picture of the situation as it exists today, it will be necessary to go back and briefly sketch certain events leading up to the present.

For a number of years after the Civil War Southern rail lines were very much impoverished and disconnected, and up to the present century there was little or no through north-and-south service or movement via Ohio River crossings, and very little demand for competitive through rates. Exports from Southern ports were confined largely to raw materials, such as cotton, forest products, naval stores, etc., produced adjacent to those ports, with result that export and import traffic to and from the Middle West was handled almost entirely by Eastern trunk lines. Latterly, however, the railroad map has changed substantially so far as north-and-south lines serving midwest territory are concerned. Briefly, the present lineup is as follows:

The Illinois Central has its own line the entire distance from Chicago to New Orleans and Gulfport, and also reaches Savannah over its Central of Georgia subsidiary. Its lateral lines also spread over the State of Illinois and a part of Indiana.

The Mobile & Ohio Railroad from Mobile reaches Chicago through such connections as the C&EI, Wabash and Alton.

The GM&N-Burlington affords another line between Chicago and Mobile and New Orleans.

The L&N, with its own line from the Ohio River to New Orleans, Mobile and Pensacola, and its ACL System connection to South Atlantic ports, reaches Chicago over its partly owned Monon from Louisville and over the C&EI from Evansville.

The Southern Railway System has its own rails from Cincinnati, Louisville and Evansville to the South Atlantic ports of Charleston, Savannah, Brunswick and Jacksonville, and to the Gulf ports of Mobile and New Orleans, and reaches Chicago over its partly owned Monon from Louisville, the C&EI from Princeton, and via its several connections at Cincinnati.

The Missouri Pacific System, through

subject at this time is a notice recently issued by the Central Freight Association Lines demanding that all export and import rates between the territory in question and Southern ports now in effect in connection with specified lines in Central Freight Association territory via Ohio River crossings be cancelled as of December 3, 1931, and that after that date domestic rates in effect to and from Southern ports are to be applied.

This will mean that the Gulf and South Atlantic group of ports, with their Cuban car ferries, will be lifted out of the now available circle of ports and outlets so far as territory *east* of the Chicago-Indianapolis line be concerned, as no competitive movement will be possible on domestic rates.

However, the Southern lines with the participation of the Monon, C&EI, Wabash, et al., will shortly publish tariffs between points in CFA territory *on and west* of the Chicago-Indianapolis-Cincinnati line (except local points on nonconcurring CFA lines) and Gulf and South Atlantic ports and Key West, primarily on basis of Baltimore rates from and to those points, with the Knott-Todd Differentials under New York or Baltimore on movement from and to Europe, Africa and the East Coast of South America, observing the Fourth Section. These rates will be applicable through Louisville and lower Ohio River crossings but not through Cincinnati. The elimination of the Cincinnati gateway to and from all CFA territory is a serious consideration.

Respecting the issuance of the foregoing tariffs from restricted territory, CFA lines have announced that they will file a strong protest with the Interstate Commerce Commission if and when the Southern Ports Foreign Freight Committee lines file tariffs publishing import and export rates on the basis which the latter have decided to publish from and

its Van Sweringen affiliations, affords a west side line from the Great Lakes to Louisiana at Texas ports. The Santa Fe also extends from Chicago to Texas ports.

Relatively, these north-and-south through lines and their port outlets are just as essential to a healthful development and distribution of world trade as are the more heavily laden east-and-west lines serving North Atlantic and Canadian ports.

Joint export rates from CFA territory to Gulf ports when for Cuba have been in effect for 25 years or more, but no competitive export rates were carried to other foreign destinations until 1916, when the Southern Railway by independent notice established a line of proportional rates from Cincinnati and Louisville to New Orleans and Mobile for export, which added to the local rates north of the Ohio River approximated the rates from points in CFA territory to New York. The Interstate Commerce Commission approved these rates over the protests of CFA lines. Later on the U. S. Railroad Administration, acting upon the insistence of commercial interests at Southern ports and in the Midwest and after public hearings and careful analysis and consideration, authorized the publication of New York rates from points in CFA territory west of the Ohio-Pennsylvania State Line to both Gulf and South Atlantic ports, and with differentials over the Gulf to Key West. The establishment of these rates was vigorously protested by the Eastern trunk lines but was overruled by the Director-General, as evidenced by the correspondence published in Decision 10510, Appendix B.

These joint through rates became effective in December, 1919, and with subsequent percentage advances and reductions are still in effect. And now cancellation of existing rates has been demanded and will be made unless such cancellation is suspended by order of the Interstate Commerce Commission.

As far back as 25 years or more, lines serving the Gulf felt that they were entitled to some return movement in way of import business to midwest territory from Europe, Africa and Asia, but by reason of the longer distance and greater length of time for voyage it was not possible to secure any of this import movement except on lower rates. The Eastern trunk lines objected to any lower scale of rates through the Gulf than through the North Atlantic, and in 1907 the matter was submitted to arbitration and the Knott-Todd Award fixed a scale of differentials on import traffic from Europe, Asia and Africa from Gulf ports under New York to Cincinnati and Indianapolis and points in Central terri-

tory taking 100 per cent or more of the New York-Chicago scale. The principle and measure of the Knott-Todd scale of differentials was the joint conclusion of two outstanding rate authorities, one representing Southern lines and the other Eastern lines. This scale has several times been before the Commission in hearings and in no case has its defined application been questioned or denied.

When the Panama Canal was opened in 1913, affording a shorter distance from the Gulf to the Orient than from New York, Asia was eliminated from the Knott-Todd application.

Later on Knott-Todd differentials were established on agricultural implements to both Gulf and South Atlantic ports for export to Europe, Africa and the East Coast of South America, and under Fourth Section Application No. 2040, the Southern lines export basis provided for the same application of Knott-Todd differentials on export traffic to Europe, Africa and the East Coast of South America as originally established on import traffic. It is not at all surprising that the Eastern trunk lines in behalf of their own interests should employ every legitimate means to monopolize for their long haul the export and import movement of the Middle West, but the record shows unmistakably that the demand for competitive export and import rates between CFA and Southern ports has been recognized and approved over the protests of the Eastern trunk lines and North Atlantic ports.

Incidentally, Canadian ports also enjoy competitive recognition.

There is a fringe of coastal territory extending all around from Halifax to Galveston for 400 to 500 miles extending into the interior hinterland, from which territory rail rates to the seaboard are carried lowest to the nearest group of ports, as, for example, from territory on and east of the Buffalo-Pittsburgh line rail rates are lower to North Atlantic ports than to other competing ports, and from territory east of the Allegheny Mountains, including West Virginia, they are lowest to Virginia and South Atlantic ports; and from territory south of the Ohio River, embracing the Southeast and Mississippi Valley territory, they are lowest to South Atlantic and Gulf ports; and from Arkansas, Oklahoma and Texas they are lowest to Gulf ports. From this hinterland territory it is entirely proper that both rail and ocean rates be so adjusted as to insure movement through nearby ports, but from competitive midwest territory, embracing the States of Ohio, Indiana, Illinois, Michigan, Wisconsin, and other states north of the Missouri River, the rail lines serving Gulf and South Atlan-

tic ports have long and consistently contended for a basis of export and import rates fairly competitive with North Atlantic and Canadian ports, and the east-and-west lines serving these latter ports have just as consistently opposed such a competitive basis.

It is true that from competitive CFA territory Southern ports are not on the direct trade routes from central territory to the ports of Europe, Africa and the East Coast of South America; hence, the necessity for differential rail rates on movement to these countries in order to offset the shorter distances, quicker time and more frequent sailings from North Atlantic ports. However, to the West Indies, Mexico, Central America and the North and West Coasts of South America, and to the Orient through the Panama Canal the shorter distances and direct trade routes from central territory are through Southern ports, and practically one-half of the world's population is in these latter countries; but even to these countries the North Atlantic ports enjoy the same ocean rates as from the nearer Southern ports, and also operate faster ocean services to the more distant countries. The liberal division of foreign territory favorable to Southern ports in point of direct trade routes and shorter distances was apparently not sufficiently featured and recognized in Docket 2040, Decision 10510.

If export and import rates through Southern ports are cancelled, as proposed, it will disrupt well established commodity movements in both directions and will cause exporters and importers loss of business, deprive them of the benefit of differential rates and make necessary the cancellation of ocean, rail and port terminal contracts, and require a rearrangement of routes, reconsigning in transit arrangements, etc. It will also seriously cripple port facilities and rail and ocean carriers serving Southern ports, including the car ferries from Key West and New Orleans to Cuba, and will close the Cincinnati gateway to export and import movement to and from the territory in question, including Chicago and Indianapolis.

A limited volume of essential export and import commodities has been handled on these rates and now we are called upon to pull them out and disrupt these essential movements while rates between the same territory—as far east as 78 per cent points—and the Canadian ports of Montreal, Halifax and St. John are continued on the same basis as New York or Philadelphia on exports and same as Baltimore on imports with the distances substantially greater to Halifax and St. John than to Southern ports.

The proposed cancellations are manifestly not in the interest of public policy.

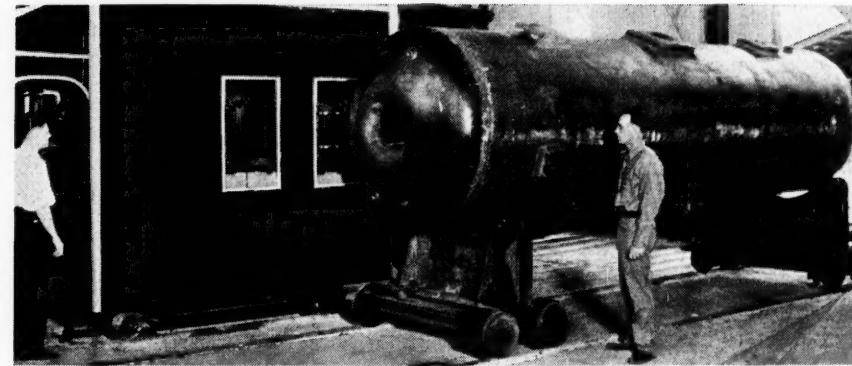
# High-Pressure Welded Boilers

WHAT is believed to be the first horizontal return tubular boiler of welded construction to withstand a pressure of 175 pounds, and to conform to rules of the ASME Code, has been produced by the Hedges-Walsh-Weidner Company, subsidiary at Chattanooga, Tenn., of the International Combustion Engineering Corporation.

Low pressure heating boilers of the firebox type have been welded for some time, but this boiler is of a different class. In its construction the company employed its improved high pressure weld, such as has been used in the manufacture of drums for water tube boilers and for other high pressure service. The complete boiler shell was furnace-annealed and the seams X-rayed in accord with the requirements of the ASME Code for high pressure boilers.

The company points out that the welded drum eliminates any danger from caustic embrittlement, and so firm is its belief in the general adoption of welded boiler construction that its entire organization and shop equipment has been made ready for the complete adoption of welding instead of riveting in all boilers.

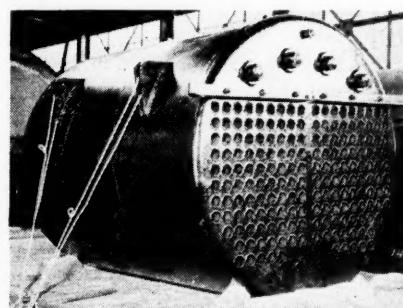
The X-ray machine of the company is one of two in this country used for a like purpose. All welded seams of boilers are radiographed to provide definite proof of the soundness of the welds, and the X-ray machine is said to be able to detect the most minute defect in welded seams of boiler plate up to five inches thick. Besides, just before shipment all



Electric Eye Penetrates Steel Plate Up to 5-Inches Thick

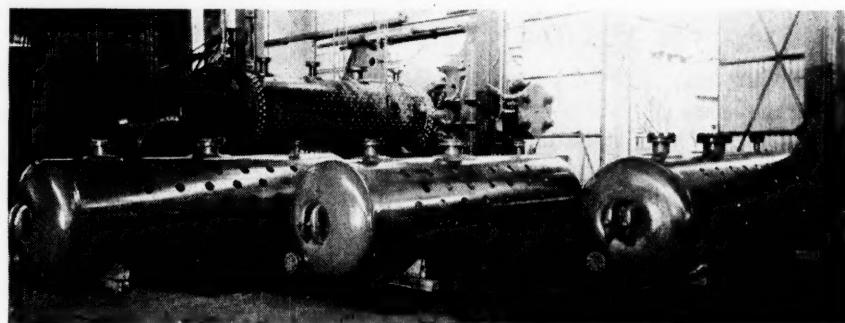
The Hedges-Walsh-Weidner Co. uses one of the largest X-ray machines in the world to locate defects in welded boilers and drums

welded drums are subjected to a hydrostatic test of double the working pressure and then stamped, certifying that



Horizontal Return Tubular Boiler of Welded Construction

This boiler is made to withstand a pressure of 175 pounds, and is designed to eliminate leaks at the girth seams



Drums Built for Water Tube Boilers

These all-welded drums were recently produced for installation at one of the institutions of the State of Mississippi at Jackson

they are insurable with the leading insurance companies. All drums are annealed in new type gas-fired annealing furnace 16 feet wide, 18 feet high and 66 feet long, to relieve the stresses set up during manufacturing processes. This furnace is of such a size as to make possible the annealing of the largest drum that can be shipped in one piece.

## Three-Association Conference

Improved convention plans are contemplated through the joint effort of three associations at the Joint Roofing and Sheet Metal annual convention to be held at Louisville, Ky., in the week of January 25, 1932. Invitations were presented to the Associated General Contractors and to the American Institute of Architects to send delegates to the joint meeting of sheet metal, slate and composition roofers, and it is announced that T. T. Flagler, past president of the Associated General Contractors of America, and Robert D. Kohn, president of the American Institute of Architects, will deliver addresses at the convention. A feature of the meeting will be a sales clinic conducted by E. St. Elmo Lewis of Detroit, merchandising and advertising counselor. The entire tendency of the convention is said to be toward business conferences. E. M. Pope, 58 W. Washington street, Chicago, is chairman of the publicity committee.

# IRON, STEEL AND METAL MARKET

## Steel Production Makes Definite Upturn

Pittsburgh, November 2—[Special.]—Last week occurred the first definite upturn in the rate of steel production since the seasonal rise culminated in the latter part of March. The industry as a whole produced ingots at about 27 per cent, against 26 per cent the preceding week and 27 per cent the week before that. The Pittsburgh district rose from the 25 per cent rate it had shown for six weeks to fully 27 per cent and further increases are in definite prospect. The Birmingham and Youngstown districts had noticeable increases while Chicago remained at 25 per cent.

The Pittsburgh district increase was due partly to increased steel requirements for fabrication for Radio City, New York, the 125,000-ton contract having been let seven months ago, and partly to increases of miscellaneous character. Rail and track material business is accumulating, and more sheet bars for tin plate works will be required shortly, whereby the Edgar Thomson steel works will resume in a couple of weeks or so.

Exactly what the automobile industry will do is conjectural, but some sort of increase is certain. In the active season, production is closely regulated to public buying, but few new models were brought out at midsummer while many are about to be brought out and it is partly a matter of choice or judgment when this is done, there being also the point that the producers desire to furnish labor employment at the time of year when it is most needed. Last week, September production was officially reported at 143,212 cars and trucks, United States and Canada, a small output relative to the 1,639,027 total of the first half of the year according to old standards, but the inclination of the public as to what time in the year it will buy has undoubtedly changed. Even at that the automobile industry accounted for approximately its usual proportion of the total steel made.

The farm implement industry is now definitely increasing its schedules and is buying steel a little more freely week by week. It will not have a good season, speaking generally, but by getting into production later than usual it will have a fair rate for a few months.

Such seasonal decreases in steel demand as have regularly occurred in the past are likely to be less marked this time, by reason of the extreme conservatism of buyers all along the line in the

last two or three months. Line pipe production indeed is already virtually ended for the season.

With definite increases in steel requirements of several consuming lines, and with little or no decrease in other lines, the present prospect according to majority opinion in the steel trade is that October will be left behind as the low month of the year in steel production, with November and December showing successive increases. This would be exactly contrary to the marked seasonal swing of the past and is thus regarded as a very cheerful thing even though admittedly the increased tonnage will not give the industry anything like a really fair operating rate. Much more substantial increase for the first three months of the new year is certain unless all precedents are to be violated, and there is no basis for such expectation. On the contrary, there is a growing feeling that the depth of the business depression has just been passed, it being too early for statistics to have accumulated to prove the point.

There was no occasion for disappointment at the poor financial statements being made by steel companies for the September quarter, for the facts were well known. There was 30 per cent decrease in steel ingot production from the second to third quarter and there should be greater decrease in gross earnings since certain fixed expenses, like taxes, ran along just the same. As a matter of fact the Steel Corporation showed only 34 per cent decrease. With practically all steel companies there were large drafts on surplus, but a part of those drafts was for depreciation and obsolescence allowances, which could not be expected to be earned in such times.

## Lead Dominates the Metals, Advancing \$5 a Ton

New York, November 2—[Special.]—Among the metal markets lead has been the most active and interesting affairs coming to a head on Wednesday when the American Smelting & Refining Co. advanced prices \$5 per ton to 4 cents per pound, thus reestablishing the levels prevailing two weeks ago. Demand for copper has been tapering, following the extremely active period the preceding week.

The story of the zinc market has been one of weakness. The price of zinc ore

in the tri-State district, centering in Missouri, has fallen to \$18 per ton, the lowest price of the present century, the previous low having been \$20 per ton in 1921. The price of prime western slab zinc has dipped to 3.15c per pound, East St. Louis, which is the lowest point since 1895.

The price of silver has been fairly strong though the market has not gone into the high levels expected by many when gold standards were suspended in some countries. Quicksilver has fallen to the lowest levels in several years, being available at \$72 per flask of 76 pounds.

Industrial conditions appear to be improving somewhat. The steel industry gives a more optimistic account of itself, with the rate of operations slightly higher, at 29 per cent of capacity. Many farm implement manufacturers are resuming operations, and in the Pittsburgh steel district a higher rate of industrial activity is noted. Automobile production increases slowly but surely.

The Copper & Brass Research Association announces that the new Department of Commerce building in Washington contains 2,000,000 pounds of copper, brass and bronze in various forms, thus illustrating how a great modern building is a larger consumer of metals. Bronze gates adorn the entrances and bronze doors add to the impressiveness of the lobbies. The lighting fixtures are of ornamental bronze and there are 36 bronze elevator doors. For water supply about 600,000 pounds of brass pipe has been installed. Bronze is used for hardware and lighting fixtures in the building's 3000 rooms.

Export sales of copper during October were about 35,000 tons, the largest volume for several months. Domestic business was the best for some time. Prices of copper were unchanged all week at 7 to 7 1/4c per pound in the domestic market and 7 1/2c for export. Mine or primary producers participated in some domestic and export business. They sell in the home market at 7 1/4c per pound while custom smelters are willing to sell at 7 cents.

On Wednesday a hearing on a possible duty on copper was being held at Washington before the Tariff Commission. It was pointed out how production had increased elsewhere than in the United States during recent years and how foreign copper was becoming a menace to the American copper industry. A Representative from Montana has promised

to introduce a copper tariff bill in the next session of Congress.

Meanwhile the curtailment conferences are in session at New York, with representatives present from virtually all producing countries of the world. So far, the meetings are being held in committees or groups, each group or section of the world trying to decide upon a solid stand to take for that group. Later, general conferences will be held at which universal proposals will be launched.

The excellent demand for lead has been one of the most interesting phases of the metals markets. When the price was reduced \$5 per ton two weeks ago the lead trade was taken by surprise as the mark-down seemed unwarranted in view of the good statistical position of the metal. The large and financially-strong lead consumers immediately recognized the fact that the metal was a bargain and they began to buy very heavily for future needs rather than to cover orders for manufactured goods in sight.

In fact, the buying of lead got out of hand of the producers. Many found themselves selling much more than they intended. First they started limiting daily sales to the equivalent of the daily production of lead. Western producers began marking up lead prices a dollar per ton per day and finally the leading producer made the clean cut advance of \$5. This feverish lead demand will stand out in the year's history of the metal markets.

The tin market has been a very dull and insipid affair. Ever since Great Britain went off the gold standard American tin consumers have been buying practically nothing. Yet prices have held remarkably well during this period of dullness and the trade wonders what will happen to prices once the Americans get into a buying mood again. The Welsh tin plate makers, on the other hand, are reported to have bought substantial quantities of the metal.

### Better Conditions Anticipated in Birmingham District

Birmingham, Ala., November 2—[Special.]—There is evidence in steel circles that a number of projects which were under consideration several months ago and later dropped because of general conditions are being revived, and inquiries will be put out looking to actual consummation. In iron fabrication, such as pressure pipe manufacture, there is hope that winter business will show decided improvement, with a steady melt of pig iron. With a number of foundries anti-

cipating better operation of cupolas, the coke trade holds out promise of improvement. In a number of states there are prospects of road building and other construction work being carried on which will require Portland cement. The building stone and marble industry looks forward to healthy contracts through the winter.

The pig iron market in the South is uncertain. This is brought about by the policy of melters buying only as immediate needs present. The pipe makers, the stove foundries and other interests which melt pig iron adhere to the policy of carrying as little raw material on yards as possible, being assured there will be prompt delivery as the product is required. This policy has been in effect a long time and results in throwing doubt on the iron market. Production is being held down to a minimum, with six blast furnaces making iron at present, all but one, the largest furnace of the district, being on foundry iron. The surplus stock remains heavy. A few orders are again reported coming from the middle-West and from Atlantic coast ports. Prices are firm, \$12, No. 2 foundry, on iron for melting in home territory and \$11 for what goes from the district.

The steel mills are maintaining the pace noted last week and indications are that this week business will be offered which may warrant a change. Eight open hearth furnaces have been producing ingots, five of these 140 tons each, one, 125 tons and two 90 tons capacity. There is little steel on yards but it is necessary to watch the tonnage. Sheet mills have been making 50 per cent capacity and better for some time. Plate mills have not been doing so well. There has been reduced business in wire and wire products while other shapes, including reinforcing concrete bars are not making more than 40 per cent capacity.

Structural steel fabricating shops in maintaining four days a week operation are providing more or less work for the full forces of the shops. It is this interest that reports reconsideration of projects which were discussed some months back and dropped. There is a little unfilled tonnage with the structural shops and if new orders to any extent develop there is likely to be steady operation through the winter.

Louisiana has given considerable business in cement, steel and other products to the Birmingham district, and is calling for bids on additional road work. The government has several projects for new buildings, postoffices, court houses, flying field and other places under consideration. There is industrial development also to be reported.

Clay products companies report a

slight improvement in business. Dixie Fire Clay Company announces completion of its development program and now has four kilns, a drying plant, crushing machinery and brick and shape making departments, an industry valued at nearly \$100,000 now in shape. Fire clay and coal are obtained at the plant, kaolin is brought from Georgia and bauxite comes from Anniston, Ala.

The coal trade continues dull. The coke trade is not improved and production is around 50 per cent capacity. The scrap iron and steel market shows no change, the trading being in small lots. Quotations for old material have been changed a little.

Pig iron and iron and steel scrap quotations in the Birmingham district are as follows:

#### PIG IRON

No. 2 foundry, 1.75 to 2.25 per cent silicon, \$12.00; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$12.50; iron of 2.75 to 3.25 per cent silicon, \$13.00; iron of 3.25 to 3.75 per cent silicon, \$13.50.

#### OLD MATERIAL

Steel rails	.....	\$9.00 to	\$9.50
Steel axles	.....	12.00 to	13.00
Iron axles	.....	12.00 to	13.00
Heavy melting steel	.....	7.50 to	9.00
No. 1 cast	.....	9.00 to	10.00
Stove plate	.....	7.00 to	7.50
No. 1 railroad wrought	.....	7.00 to	8.00
Car wheels	.....	8.00 to	9.00
Tramcar wheels	.....	8.50 to	9.50
Machine shop turnings	.....	3.50 to	4.50
Cast-iron borings	.....	3.50 to	4.00
Rails for re-rolling	.....	10.25 to	11.00

### Welding to Be Discussed

Comprehensive discussion of methods for testing oxy-acetylene welded joints will be a feature of the convention of the International Acetylene Association, at the Congress Hotel, Chicago, November 11-13. Consideration of the importance of tests, to welders and to users and makers of welded products, will include a demonstration of visual and stethoscopic tests; hammer, bending, tension and hardness tests; invisible-ray tests; specific gravity, compression, and internal pressure tests.

Among the speakers listed are Dr. S. Lewis Land, Heating and Piping Contractors' National Association; Thomas Jones, Illinois Steel Company; Rufus C. Dawes, "A Century of Progress"; Professor Comfort A. Adams of Harvard, and G. O. Carter, consulting engineer.

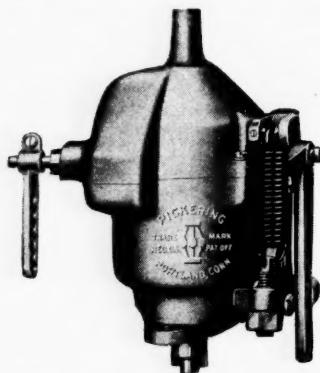
Also authorities on welded piping will discuss welded heating, water, and air-conditioning systems; overland oil and gas lines, and the use of special fittings for welded installations. The chemical industry session will deal with high-pressure, high-temperature chemical piping; methods of welding the new corrosion-resisting alloys, and welded power piping. Engineering education in welding also will be a topic.

## NEW AND IMPROVED EQUIPMENT

### Governors for Combustion Engines

Accompanying illustrations show two models of engine governors in extensive use on various types of internal combustion engines—models G. P. and G. P. Jr., made by the Pickering Governor Company, Portland, Conn.

Model G. P. is designed for vertical mounting, especially for gas engines of medium and large sizes, and has recently been adapted to use on some of the smaller Diesels. It is described as particularly suited to conditions where high engine efficiency and fuel economy are important factors. With a wide governing range, it is said to give extremely close regulation at any set point. Equipped with ball bearings throughout, it has practically no wearing parts, in-



G. P. Engine Governor

suring long life. Lubrication is accomplished either by splash or feed from the engine. The model illustrated shows provision for remote control where the engine is used for variable speed conditions. Through simplified design, it may also be obtained for constant speed.

Model G. P. Junior is designed for



G. P. Junior Governor

horizontal position, the usual mounting being on the timing gear plate. This model is especially recommended for high speed engines of smaller bore and stroke. It has an adjustable speed changer. It is also equipped with ball bearings and operates in a bath of oil and is said to be one of the most compact governor units available.

### Unbreakable Attachment Cap

Cutler-Hammer, Inc., Milwaukee, Wis., announce a new unbreakable attachment cap with hand grip; it is made of soft resilient rubber with blades fastened to a bakelite disc imbedded in the rubber base. The hand grip is about  $1\frac{3}{4}$  inches long, narrow and slim, with an artistic design moulded into the rubber. Protection is afforded the cord by the resiliency of the rubber handle which acts as a strain relief. The soft rubber construction also prevents the scratching or marring of floors or furniture, while its artistic design makes it attractive both for home and industrial uses, for various electrical appliances, such as vacuum cleaners, cord sets, lamps, etc. Rated at 15 amp. 125 volts, 10 amp. 250 volts, it is known as Cat. 7761, and is available with cord openings for  $11\frac{1}{32}$  and  $13\frac{1}{32}$  inch cords.



Has Hand Grip

### Driers for Seed Cotton

Two designs of hot-blast mechanical seed-cotton driers—horizontal and vertical—have been developed by the U. S. Department of Agriculture, designed for efficient and economical drying of seed-cotton. The driers may be used at cotton gins or on plantations, and either type, it is announced, is capable of handling 4 or more bales of damp seed-cotton per hour. The drying process, developed by the Bureau of Agricultural Engineering, has been covered by a public patent and is known as the Government Process. It is said to be adapted to all of the existing successful cotton-drying equipment and is described in a mimeographed publication issued by the Bureau.

### Single Cylinder Vertical Compressors

The Sullivan Machinery Company, Chicago, announces additions to its line of vertical single acting compressors in new models and new capacity ranges, including the "WL-1" belt-driven and "V" belt-driven and "WL-11" direct motor-driven compressors, and the "WL-2" and "WL-4" belt-driven vertical units. The "WL-1," the "V" and the "WL-11" compressors are single cylinder, single acting units, in which heavy duty ball bearings for mounting on the crank shaft, and compact, simple and substantial construction are features. The cylinder is cast separate from the frame; and the head, containing the inlet and discharge valves of the Sullivan "wafer" type, may be attached in any of four horizontal positions to secure convenience in piping connections. These units provide displacement ranges from 27 to 87 cubic feet per minute and are designed for pressures up to 125 pounds per square inch.

The "WL-2" and "WL-4" units are available in 2-cylinder and 4-cylinder models respectively, and are similar to the direct connected 2-cylinder and 4-cylinder units "WL-22" and "WL-44" already available. They may also be driven by "V" belts from any desirable form of power unit, and in such cases are mounted on a sub-base which supports the compressor, motor and "V" belt drive. Capacities range from 119 to 348 cubic feet.



Sullivan "WL-1" Belt-Driven Compressor

### **Oil Pressure Assembling Presses**

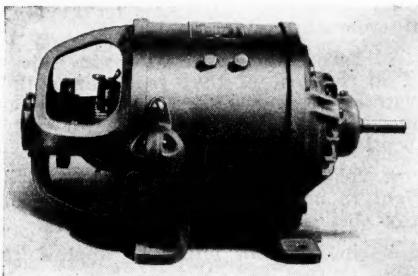
The Hydraulic Press Manufacturing Company, Mount Gilead, Ohio, announces a new series of hydraulic presses, for use chiefly as quantity production machines for general shop pressing operations, as required by practically every industry. These units, known as the H-P-M Oil Pressure Assembling Presses, take into consideration the time element on production jobs for the purpose of equalizing operations in sequence. The new press is of the Open Gap type, to provide easy access to the work. Oil is employed as both pressure fluid and lubricant, the oil storage consisting of a cavity in the upper section of the press frame. The power unit is completely enclosed; pressure pumps are mounted on the press base plate surrounded by the press pedestal, and access to the interior is through openings on each side normally covered by plates. This arrangement

pressure is regulated by a simple adjustable control. The presses are available in 7 capacities from 15 to 200 tons with either square or extended base.

other half enter the front drum. This unique arrangement effects a double circulation in the boiler. One circulation is up half the tubes in the front tube-bank to the front upper drum, then down the tubes running into the middle tube-bank to the lower steam and water

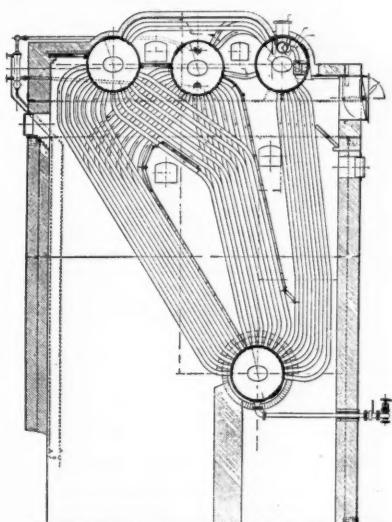
### **Small Direct-Current Motors**

A new line of small d-c. motors, to supplement their larger Type T heavy-duty motors, has been developed by the Reliance Electric & Engineering Company, Cleveland, Ohio, manufacturers of alternating and direct-current motors. Sizes of the new unit range from  $\frac{1}{2}$  horsepower, 1750 r. p. m., to 3 horsepower, 1750 r. p. m., for constant or adjustable-speed operation. Of rugged construction to withstand hard service and unusual strains when necessary, the mo-



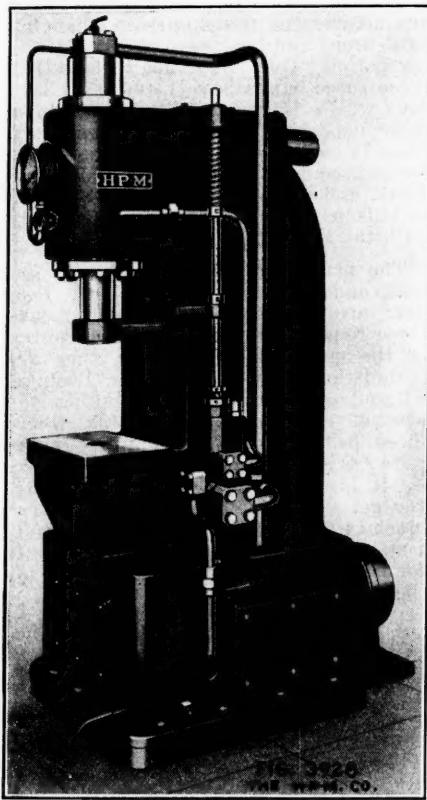
**Built for Hard Service**

tors are provided with ball or sleeve bearings and may be had in open, semi-enclosed or fully-enclosed construction. Windings are given a finishing coat of bright orange-colored enamel, making it easy to detect and remove dirt and thus decreasing maintenance cost and prolonging the life of the unit. A feature of the motor is a refillable-type commutator which facilitates removal and replacement of the copper bars, while another feature is the provision of two brushes per stud, declared to insure better commutation and to keep these power units running longer and steadier with less attention.



**Designed to Secure Adequate Circulation and Correct Steam Liberation**

drum. The other circulation is up the other half of the tubes in the front tube-bank which run into the middle upper drum, then down half the tubes in the middle tube-bank to the lower steam and water drum. This splitting of circulation is said to equalize steam liberation in the upper front and middle drums and thus to eliminate intense turbulence. Also, the new design is said to effect two improvements, namely, drier steam and lower steam velocities.



**For General Shop Pressing Operations**

makes for neatness and saves floor space. A rotary type, low pressure oil pump operates the unit, while a radial type, high pressure oil pump generates working pressure to drive the press ram. Both are driven from one electric motor. There are two forward speeds—a rapid closing speed and a slower full load pressing speed automatically controlled through a single manually operated lever that controls speed of ram movement in either forward or reverse. Working

### **Multiple Circulation Boiler**

The Combustion Engineering Corporation, New York, has developed a new type of boiler, described as providing a logical solution to the problem of insuring adequate circulation and correct steam liberation under the most severe operating conditions. The salient features of this boiler are tube arrangement and steam liberation. Tubes in the first pass of the boiler are so arranged that half of the tubes enter the front drum and the other half enter the middle drum, while half the tubes in the second pass enter the middle drum and the

### **Air Passenger Rates Reduced**

With an increase of 300 per cent in passenger volume over its system of airways since the beginning of the year, the Eastern Air Transport System, operated by Eastern Air Transport, Inc., Brooklyn, N. Y., announces reductions in air passenger rates averaging 14 per cent in one-way fares and 25 per cent in round trips. Thomas B. Doe, president of the company, declares this to be one of the most drastic rate reductions ever made by an air line, the cut affecting each of the 22 cities between New York, Washington, Atlanta, Jacksonville and Miami, served by this line. It also reduces the cost of travel over the international airway between Canada and Latin America. The volume of air mail flown in this company's planes has also shown large increases, the poundage transported thus far in 1931 being about 250,000 pounds ahead of that carried in the similar period in 1930.

## LETTERS FROM OUR READERS

### Enlarge Cash Discount to Quicken Collections

Gorman L. Burnett, Incorporated  
Construction Equipment  
Builders' Supplies  
Steel Products  
Lynchburg, Va.

#### *Editor Manufacturers Record:*

For eight years my concern has been following a cash discount plan that has proved successful in speeding up collections.

I wrote to President Hoover recently suggesting that if industry, manufacturers, merchants, property renters and creditors in general would give such large discounts for payment on the tenth of the month following the contracting of the debt that such discounts could not be overlooked, money would become more liquid and do at least twice as much work. These discounts would be a part of the cost and reckoned as such by everyone, and not a division of the profits.

Manufacturers now allow from one-half of one per cent to one or two per cent for cash, ten days. The discount is too small and the time too short to force collections.

An example of the practicability of the plan is the cement industry. A discount of 10 cents a barrel for cash, 15 days, causes the cement manufacturer to lose less money in bad accounts than any other manufacturer extending credit. A building material dealer has to discount his cement invoices.

If other manufacturers who sell building materials made similar terms, and if the dealer made terms to contractors of 5 per cent for payment by the 8th or 10th of the month, it naturally would follow that contractors would require payment from the owners to suit these terms: these owners in turn would go to the bank to borrow until the loan company money was available, or the contractor would go to the bank for financing.

GORMAN L. BURNETT

### Crop Price Stabilization

Iselin, N. J.

#### *Editor Manufacturers Record:*

As a reader of the MANUFACTURERS RECORD and land owner in the South, I am interested in all that affects the farmer or grower. I would like to offer the synopsis of a plan that perhaps will indicate how a stabilization of cotton prices may be accomplished:

1. A unit basic minimum price, determined on an average of the past 15 years, and to apply to various grades in proportion; no regard to rising market.

2. Local bank loans to growers, on

not to exceed 50 per cent of crop, not to exceed 50 per cent of basic price, are to be acceptable by United States Farm Loan banks at par, less 4 per cent discount or interest; all loans to be secured by cotton in bonded warehouse and such to be insured; but, such pledged or segregated cotton may be released on demand of grower on payment of pro rata of loan, plus costs and charges, with interest at 6 per cent.

3. In event a crop of one year is in excess of average for past 15 years, the President shall embargo all importations not afloat and en route to this country, this to remain effective until native sight cotton is below 500,000 bales; whereupon, importations may be allowed until 1,000,000 bales be in sight in the United States.

4. Tariff to be sufficient to adjust the difference in cost of production.

5. In event of a carryover in excess of 20 per cent of that year's crop, the planting of succeeding year shall be reduced 20 per cent, this decrease to apply to all growers.

6. The Federal Government to have a right to buy at market and dispose of any pledged or segregated cotton.

A similar plan might be applied to other crops.

ALFRED D. HYDE.

### Blames Dole for England's Difficulties

New York.

#### *Editor Manufacturers Record:*

Referring to Sir George Paish's commendation of the British dole, as published in one of your recent issues:

For nearly 20 years I have shown that Sir George has been wrong in nearly every proposition he has supported. Also, the late Clarence W. Barron habitually attacked and answered everything that Paish put out. While it may be true that he has been a student of economics for 30 years apparently he has much to learn.

His hope that America will adopt the dole should be construed as the argument of the fox that had lost its tail in a trap urging the other foxes to have their tails cut off.

It is England's dole that has made everything manufactured for export cost so much that England is unable to hold its foreign markets. Its foreign trade has now dropped to such an extent that, in an effort to hold what is left, the British Government is compelled not only to cut the dole but to reduce wages by 20 per cent by putting the pound sterling on a paper basis.

Is it Sir George's hope that by inducing the United States to adopt the dole in some form he can boost American costs and so give England a chance at our export markets?

GUY M. WALKER.

### Helpful "Little" Banks

Jacksonville, Fla.

#### *Editor Manufacturers Record:*

Your editorial, "The Little Bank," has struck a responsive note in my thoughts, as I have just returned from a few day's visit to a small town in southern Georgia, northwest of here. Having been formerly in the banking business, the three banks in the town interested me very much; during my stay the weekly paper came out with their statements as of September 29. Two are national banks; the other is a state bank doing business with, and being a member of, the Federal Reserve System.

Taking the three banks as a whole, the capital paid in is \$400,000; surplus and profits, \$220,000; total deposits, \$500,500. You can see how deposits have shrunk, so that capital and surplus are more than the deposits. The point that struck me most is how these three banks are helping the community in financing local crops and business during this trying period. One might not believe that these three banks have loans of \$1,334,500, which is two and one-half times their deposits. Most of the loans are what is called commodity loans, eligible for rediscount with the Federal Reserve Bank, and they have a total of \$538,690 in bills payable and rediscounts, mostly with the Federal Reserve Bank.

The main crops are cotton and peanuts, and the prices are very low. Peanuts are quoted at \$28, which means three tons of peanuts to pay for one ton of the seed used. However, they are optimistic, going about their business without complaining and making the best of conditions. Just think where those people would be if the bankers were carrying 75 per cent reserve or so. As it is, there are few vacant stores; you get seven side dishes with a 50 cent lunch in the "coffee shoppe" and there is a steady stream of wagons with peanuts for the shelling plant and cottonseed for the oil plant.

F. W. RIVERS.

### Southern Information Helps All Sections

Jacobs & Company

Clinton, S. C.

#### *Editor Manufacturers Record:*

On a recent trip to New York I found a very pessimistic attitude toward the South. We congratulate you on the constructive work being done by your publication to rectify this situation.

We appreciate the information which the MANUFACTURERS RECORD has given us, and shall give widespread distribution to such of it as we can. Southern manufacturers and publications should greatly appreciate the fine leadership you are showing in this direction.

WM. P. JACOBS.

# CONSTRUCTION DEPARTMENT

## and

# NEW ENTERPRISES

Covering the initial announcements of new undertakings with additional information about enterprises previously mentioned. The date at the end of an item indicates preliminary facts were given in a previous issue.

Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice. Mail may be delayed unless complete address is given.

The Daily Construction Bulletin of the Manufacturers Record gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

### Airports, Airplane Plants, Etc.

Ga., Atlanta—See Want Section—Bids Asked.

Ky., Louisville—Maj. Gen. James F. O'Ryan, V. P. American Airways, Inc., 122 E. 42nd St., New York, reported, negotiating for lease of hangars at Bowman Field.

N. C., Asheville—City of Black Mountain, Charles Boone, American Legion Post and Black Mountain Chamber of Commerce, reported, interested in formation of Asheville-Black Mountain Airport, 9 miles from Asheville on State Highway, No. 10; work to begin in month; hangars and 4 runways will be completed in about 6 weeks; field 1 mile long and 2000 ft. wide.

N. C., Burlington—City, Earl B. Horner, Mayor, reported, started work clearing airport site.

Okla., Fort Sill—Walter M. Vernon & Co., Fort Smith, Ark., low bidder at \$58,390, for construction double air corps hangar, 128x308 ft.; Major O. W. Humphries, Q. M. C.; Robt. O. Bradley & Co., Consult. and Constg. Engrs., Chickasha. 10-8

Okla., Muskogee—Lieut. Roy W. Camblin, Commandant, Hatbox Field, plans installing floodlights; erect office building, hangar, etc.

Okla., Oklahoma City—Clint Johnson of Oklahoma Aviation Service, reported, submitted proposal to city for construction hangar at Municipal Air Terminal.

S. C., Charleston—Charleston Constructors, Inc., 58 Broad St., reported, have contract for addition to administration building at municipal airport. 10-22

Tex., Beaumont—City Coms., reported, received following low bids for airport work: Draining airport and moving hangar from present location, Scott Shambaugh, 1401 Dowling St., Houston, for material and labor; Dickey & Adcock, for found. work for hangar.

Tex., Duncan Field—The Ingalls Iron Works Co., Birmingham, Ala., has contract for 2000 tons fabricated structural steel to be used in engineering shops and boiler house, etc., under way here, for which A. J. Rife Construction Co., 1913 N. Howard St., Dallas, Tex., has the general contract. (Incorrect details noted 10/29.)

Tex., Galveston—Jesse B. Johnson, U. S. N. Bank Bldg., Galveston, started work on administration building and hangar for new municipal airport; hangar of steel with corrugated iron sides; administration building of hollow tile. 10-15

Tex., Jasper—City, W. P. Smith, Chrmn. Aviation Committee, reported, interested in location of airport on 144-acre site.

Va., Langley Field—See Want Section—Bids Asked.

### Bridges, Culverts and Viaducts

#### Proposed Construction

Ark., Horatio—Kansas City Southern Ry. Co., A. N. Reece, Ch. Engr., Kansas City, Mo., plans bridge over Little River.

Florida—See Roads, Streets and Paving.

Kentucky—See Roads, Streets and Paving.

Maryland—State Roads Coms. has low bids for 3 bridges. See Roads, Streets and Paving.

Mo., Kansas City—See Roads, Streets and Paving.

Mo., St. Louis—City, Bd. of Public Service, plans 1200-ft. rein. conc., steel bridge, 60 ft. wide to carry Hampton Ave. over St. Louis-San Francisco Ry., and Missouri Pacific R. R. tracks, Manchester Ave., \$475,000.

Oklahoma—See Roads, Streets and Paving.

Texas—State Highway Coms., G. G. Wickline, Bridge Engr., Austin, plans 5 bridge projects. See Roads, Streets and Paving.

Tex., Austin—See Roads, Streets and Paving.

Tex., Fort Worth—Tarrant County, W. E. Yancey, County Aud., opens bids Nov. 9 for bridge, Dirks road; rein. conc., steel, 104 ft. long, 19 ft. wide; Wesley Stevens, County Engr.

Tex., Fort Worth—Texas & Pacific Ry. Co., E. F. Mitchell, Ch. Engr., Dallas, and City, Geo. Fairtrace, City Mgr., signed agreement for viaducts: Ballinger St., rein. conc., steel, 42 ft. roadway, two 7-ft. sidewalks, 232 ft. long, north approach 220 ft. long, south 185 ft., \$117,000; start work early 1932; Summitt Ave., rein. conc., steel, 58-ft. roadway, two 7-ft. sidewalks, 153 ft. long, 136 ft. north approach, 255 ft. south, \$118,000; start work about Jan., 1932; W. Daggett Ave., rein. conc., steel, 40-ft. roadway, 8-ft. sidewalk, 254 ft. long, east approach 531 ft., west 150 ft.

Tex., Fort Worth—City, Geo. Fairtrace, City Mgr., and St. Louis-San Francisco Ry., F. G. Jonah, Ch. Engr., St. Louis, Mo., signed agreement for 3 new viaducts, Ballinger St., Daggett Ave. and Summit Ave., eliminating grade crossings on first 2 and replacing structure on Summit; \$500,000.

Virginia—See Roads, Streets and Paving.

#### Contracts Awarded

Md., Baltimore—Wm. A. Potts, 660 Tuttman Ave., has contract for excavation in connection with Warwick Ave. and Garrison Lane bridges, in connection with Pennsylvania R. R. electrification; Catalano & Peccora, Gen. Contrs., Eldorado Apts., Eldorado and Haddon Aves.; Whitman, Requardt & Smith, Engrs., Baltimore Trust Bldg. 10-1

Okla., Arapaho—Following have sub-contracts in connection with Custer County bridge No. 1-S, over South Canadian River: Struc. steel, Kansas City Structural Steel Co., Kansas City, Mo.; cement, O. K. Portland Cement Co., Okay, Ark.; rein. steel, Capitol Steel & Iron Co., 1720 Agnew St., Oklahoma City; comprises 30 100-ft. deck trusses and 2 50-ft. I-beam approaches; piers and abutments of rein. conc., pier tubes range, 30 to 68 ft. total height, base ranging from 10 to 50 ft., north abutment on foundation piling of timber, roadway of rein. conc., 20 ft., 3163 ft. wide; Green Construction Co., Gen. Contr., 11 N. Lee St., Oklahoma City. 10-29

### Canning and Packing Plants

Fla., Arcadia—DeSoto Packing Co. erecting addition to grapefruit plant; install machinery; double present capacity. 10-8

### Clayworking Plants

Ala., Anniston—Super Bond Clay Co. incorporated; J. Ellis Harvey, 1007 Lighton St.

Miss., Charleston—Independence Co., 71 Madison St., Memphis, Tenn., fiscal agents for Mississippi Clay Co., B. F. Saunders, Webb, reported, making engineering survey of clay and gravel fields. 11-13-30

### Coal Mines and Coke Ovens

Tex., Marshall—M. C. Schneble, representing McAlester Fuel Co., McAlester, Okla., reported, exploring for lignite deposits.

### Cotton Compresses and Gins

Tex., Bryan—Farms Union Gin Co. incorporated; Charles Palermo.

Tex., Violet—Serv-U Gin Co., J. W. Jafufka, Mgr., will rebuild burned ginnery; construction to begin Feb.; 100x28 ft., brick tile or all steel, cement floors; install ginning machinery; cleaners; dryers; separators; engines; belting, etc.; owner builds. 10-15

### Drainage, Dredging and Irrigation

Fla., Miami—Royal Citrus Groves Co., Inc. applied to U. S. Engr. Office, Florida Theatre Bldg., Jacksonville, for permission to dredge in bay and fill in marsh land; approx. 600,000 cu. yd. soft material and levees; Watson & Garris, Engrs., Hill Bldg.

Fla., Tampa—War Dept., Washington, allotted \$33,000 for dredging and deepening Tampa Harbor; will complete operations previously authorized by Congress for deepening entrance to Tampa Bay at Egmont Key from 27 to 29 ft. at mean low tide; U. S. Engr. Office, Florida Theater Bldg., Jacksonville, in charge.

La., St. Bernard—St. Bernard Parish, L. H. Folse, Engr., 804-06 Union St., New Orleans, let contracts for \$125,000 drainage project, including lateral canals and levees: Screw type pumps and Diesel engines for pumping plant, Fairbanks, Morse & Co., Chicago, Ill.; suction and discharge pipe, Deaton & Robertson Co., Tchoupitoulas St.; foundation, Boh Construction Co.; will embrace entire industrial area of the Parish included in Port of New Orleans.

Mo., Kansas City—See Roads, Streets and Paving.

Tex., Waco—McLennan County and W. C. Cobb let contract to S. P. Babcock, Waco, at \$19,828, for 3.69 mi. drainage channel.

### Electric Light and Power

**Electric light and power work in connection with many LAND DEVELOPMENT operations involves the expenditure of large sums of money. See that classification for details.**

La., Plaquemine—El Silber, Chmn., White Way Committee, interested in installation white way, Eden St.

Mo., Kansas City—Kansas City Power & Light Co., sinking piles through 20 ft. of quicksand in Northeast industrial district for construction of outdoor transmission substation on 8 acre site; transmission wires, underground, will feed substation with current at 13,200 volts, stepped up to 33,000

volts for transmission lines for suburban district; steel frame supports; conc. platform will be constructed for 6 transformers, each weighing 60 tons. 4-30

Mo., Lees Summit—See Water Works.

Mo., Moberly—City, reported, plans erecting power plant.

Mo., Farmville—Virginia Public Service Co., Charlottesville, advises no immediate changes contemplated to recently acquired power plant. 10-22

W. Va., Huntington—Appalachian Electric Power Co., Charleston, George N. Tidd, Pres., reported, expended \$1,000,000 in Huntington territory over period of 18 months, centering at Kenova plant; purchase new machinery; in Charleston will improve and extend existing power transmission lines; also reported that company definitely abandoned plans for building hydro-electric plant on New River, divert funds for program of improvements to coal burning plants. American Gas & Electric Co., 30 Church St., New York, holding company, advises plans for Huntington area, and particularly Kenova plant, vague at present time; there is some talk of adding somewhat to steam facilities at that plant.

### Flour, Feed and Meal Mills

Tex., Dallas—Rex-O-Kan Feed Mills, incorporated; J. C. Mitchell, 5211 Parkland St.

### Foundry and Machine Plants

Mo., St. Louis—James R. Kearney, reported, acquired control of National Duct Rod Co., Portland, Ore., manufacturer of duct rods and trimmings; Morse-Sterrett Products Co., Oakland, Calif., manufacturers of guy clamps, guy strand clips and steel wire cutter, and Chance Co., Centralia, Mo., manufacturers of patent anchors and other electrical specialties; will be merged with James R. Kearney Corp., 4232 Clayton Ave.; Portland Co. will be moved to St. Louis together with the engineering and sales dept. of Morse-Sterrett and Chance Companies and advertising dept. of Chance Co.; equipment will be manufactured in Centralia at Chance factory.

### Garages and Filling Stations

D. C., Washington—Fidelity Construction Co., 1218 Randolph St., N. W., Washington, reported, low bidder for garage for Dist. Commrs. 10-29

Fla., Miami Beach—Wm. S. Green Co., 1237 20th St., Miami, reported, has contract for service station, Orange State Oil Co., N. E. 55th St.; Lester Avery, Archt., Seybold Bldg.

Ky., Florence—C. W. Myers Motor Co. incorporated; C. W. Myers.

Md., Baltimore—Mrs. R. Holzweig, 1117 E. Lombard St., receiving bids on 1 story, brick, 40x60 ft. garage, 1016 E. Lombard St.; Samuel Smullins, Archt., 3721 Belle Ave.

Md., Baltimore—Baltimore Plumbing Supply, Isaac Frenkel, soon take bids on 9 garages and pipe storage shed rear 3-9 N. Central Ave.; 1 story; brick; 20x77 ft. and 51x22 ft.; A. C. Radziszewski, Archt., 425 S. Ellwood Ave.

Md., Baltimore—Sherwood Bros., Baltimore Trust Bldg., reported, receive bids in spring for improving filling station Monroe & Washington Blvd.; 1 story; brick and stucco, and at same time for filling station at Hampstead, frame, 1-story, 38x25 ft.

Mo., Catonsville, Baltimore—Leinbach & Rich, W. W. Porter, R. L. Kumpf, Montrose Ave., Aumanhauser & Robb, all Catonsville, estimating on garage and warehouse for Heilbach Co., 720 Frederick Ave.; 2 story; brick; 50x100 ft., Irvin B. Spittel, Archt., 4103 Frederick Ave. 10-29

Mo., Jefferson City—W. A. Curtis, Street Commrs., reported, plans erecting equipment and storage and distributing plant, with automobile service, repair and garage.

Mo., St. Louis—R. E. Gurley Oil & Supply Co., incorporated; R. E. Gurley, 5611 Devonshire.

N. C., Hendersonville—Asheville-Atlantic Refining Co., 765 Biltmore Ave., Asheville, reported, construct service station, Main St.; brick, steel truss, 1 story, 130x75 ft.; day labor; M. R. Sabilton, Jr., 42 Foreman Ave., Asheville, in charge.

Tenn., Nashville—Warner Bros. Pictures, Inc., 321 W. 44th St., New York, let general contract to Sumner Construction Co., Sumner Bldg., Nashville, and G. A. Zimmerman, New York, for office building and connecting garage 6th Ave. and Church St.; \$600,000; garage capacity 200 cars, 2 stories; Marr & Holman, Archts., Stahlman Bldg.; H. R. Maier, Ch. of Const. for Warner Bros. 7-9

Tex., Houston—Market Auto Service, Inc., chartered; Sterling D. Anderson, 1201 McKinney St.

Va., Grundy—Citizens Chevrolet Sales Co., incorporated; Perry H. Keen, Honaker.

Va., Norfolk—Superior Motors Corp., capital \$50,000, incorporated; B. L. Shipman, M. E. Church, Ocean View.

### Gas and Oil Enterprises

Ky., Somerset—South Kentucky Pipe Line Co., capital \$100,000, incorporated; C. E. Currys.

Miss., Crystal Springs—Mississippi Industrial Gas Co., Jackson, reported, started work on distributing system, lately noted having gas franchise; expend \$15,000 for labor in laying pipes in city limits; B. M. Hennington, in charge. 10-29

Miss., Hattiesburg—Hattiesburg Gas Co. (Delaware Corp.), incorporated; A. Y. Harper, New Merchants Bk. Bldg., Jackson, Res. Agt.

Mo., Bolivar—Superior Petroleum Co., capital \$100,000, incorporated; C. W. Viles, Lloyd McNadd.

Mo., Mansfield—Quality Oil Co., incorporated; Marion E. Miller, Ava.

Mo., St. Louis—Harley L. Clarke, Pres., Utilities Power & Light Corp., 327 S. La Salle St., Chicago, Ill., controlling Laclede Gas Light Co., reported, has contract for distribution of natural gas in mixture with artificial gas; Laclede Gas Light Co., will apply to Missouri Public Service Coms., Jefferson City, for permit.

Mo., St. Louis—Sid's Petroleum Corp., capital \$100,000, incorporated; Fred Dubinsky, 6318 Southwood St.

N. C., Greensboro—American Oil Co., Valley Park Drive, reported, let contract to Geo. W. Kane, Jefferson Bldg., Greensboro, for bulk oil storage and distributing plant; install pumping plant; \$100,000.

Oklahoma—Stanolind Pipe Line Co., Phillips Bldg., Tulsa, reported, let contract to National Tube Co., Frick Bldg., Pittsburgh, Pa., for 65 miles, about 5000 tons of 8-in. pipe, in addition to contract let to same company lately. 9-24

Oklahoma, Oklahoma City—City, reported, defeated gas franchise to Oklahoma Natural Gas Corp. 10-1

Tenn., Nashville—Cumberland Oil Co., incorporated; John C. Green, Gale Lane, H. E. Richardson.

Tex., Amarillo—Enterprise Oil Corp., capital \$25,000, incorporated; J. T. Parks, 1924 Harrison St.

Texas—Continental Construction Co., Professional Bldg., Kansas City, Mo., reported, may construct 24-in. auxiliary natural gas pipe line parallel to recently completed line Texas Panhandle to Chicago; capacity 20,000,000 cu. ft. gas daily.

Tex., Dallas—Tar River Royalty Co., capital \$20,000, incorporated; E. W. Jones, Dallas Natl. Bk. Bldg.

Tex., Dallas—Elgin Drilling Co., incorporated; Robt. Anderson, 5016 Airline Road.

Tex., Dallas—Ark Oil Co., incorporated; J. W. Hassell, Magnolia Bldg.

Tex., Dallas—Wakefield Oil Corp., incorporated; Wayne Bridges, Marvin Bldg.

Tex., Gladewater—Marine Production Co., capital \$50,000, incorporated; W. W. Bradley.

Tex., Houston—Humble Oil & Refining Co., reported, acquired physical properties of Houston Oil Terminal Co.

Tex., Houston—W. K. Oil & Gas Co., capital \$60,000, incorporated; Ira P. Trotter, 3707 Graustad St.

Tex., Wellington—City receives bids Nov. 16 for supplying city with gas through municipally owned gas plant. 9-24

### Land Development

Ala., Birmingham—Park Bd., reported, approved plans by Wm. H. Kessler, 517 N. 22nd St., for development of Woodrow Wilson Park; \$37,000 appropriation; construct mall extending east and west through center; walkways, fountains, etc.

Fla., Bradenton—Blauwvoet Nurseries, Inc., chartered; J. J. Colle, O. J. Platsted, N. D. Ford.

Fla., Miami—Leebert Co., incorporated; W. H. Beckham, Olympia Bldg.

Fla., Jacksonville—Doomar Corp., incorporated; N. M. Doomar, 157 E. Eighth St.

Fla., Palm Beach—Romer, Inc., chartered; G. T. Mann, Civic Bldg., Miami.

Md., Baltimore—Kings Manor Development Co., Inc., 100 S. Hopkins Place, incorporated; Wm. H. Day.

Md., Baltimore—Public Improvement Coms., reported, plans expending \$15,000 in 1932 for playground at Wheeler and Mosher Sts.

Md., New Windsor—Mount Olivet Fruit Co., incorporated; J. Walter Englart.

Mo., Kansas City—Finance Committee approved appropriation of \$300,000 from bond funds for park work this winter. 6-4

Mo., Kansas City—Fidelity Realty Co., incorporated; John G. Sheldon, 25th & Locust Sts.

Tex., Dallas—Velvet Realty Co., capital \$30,000; incorporated; C. D. Cain, 3008 W. Jefferson St.

Tex., Eagle Pass—W. C. Moody, Robert E. Lee Hotel, San Antonio, and Buck Taylor, Carrizo Springs, reported, acquired 12,500 acres in Maverick County; develop in subdivisions of 1000 acres each.

Tex., Galveston—City soon call for bids for erecting 3 buildings at golf course and recreation park, Offatts Bayou. 7-30

### Lumber Enterprises

Fla., Wabasso—Graves Bros., formerly of Hosford, reported, erecting lumber mill; logging railroad being laid from Wabasso, distance of 8 miles; 40,000 acres of timber; capacity 25,000 ft. lumber daily; J. M. Barnes, Mgr.

Md., Elkton—Avon Construction Co., 216 E. Lexington St.; Sidney McCall, 3404 Marmon Ave.; Ralph McMurray, 39th St. and Old York Rd.; Tase Norris, 9-3 Cathedral St.; C. E. Brohawn & Co., Cambridge St., all Baltimore, and H. T. Seymour, Easton, estimating on relocation of buildings and lumber yard of Keys & Miller Lumber Co., preparatory to construction of Bridge St. grade elimination project; for State Roads Coms., Federal Reserve Bank Bldg.; cost \$25,000; Wm. F. Stone, Archt., 2612 N. Charles St., Baltimore. 10-22

Mo., North Kansas City—Wheeler Lumber, Bridge & Supply Co., Des Moines, Iowa, reported, leased building 1531 Iron St. for lumber products mfg. plant; A. C. Reinking in charge; lumber for use in Wheeler plant will be creosoted in plant of National Lumber & Creosoting Co., Leeds.

Tenn., Memphis—Frank E. Robertson, 970 Faxon St., acquired stock in Erskine Williams Lumber Co., Inc., 1526 Bank of Commerce Bldg.; mill at Madison, Ark.

Tex., Littlefield—Lamb County Lumber Co., incorporated; T. G. Hancock, T. J. Flynn, A. H. Wild.

### Mining

Ark., Fort Smith—Sequoyah Marble Corp., W. K. Palmer, Consol. Engr. and Managing Dir., care of Pickwick Hotel, Kansas City, Mo.; organized to take over old marble quarry near Marble City, Sequoyah County, Okla., 10 miles north of Sallisaw; making arrangements for re-equipping quarry and building finishing mill. Address W. K. Palmer. 10-1

La., New Iberia—Jefferson Lake Oil Corp., Inc., 905 New Orleans Bank Bldg., and Beaumont, Tex., reported, soon begin work on shops and drilling units; expend \$500,000; sulphur field is located near New Iberia-Abbeville branch of Southern Pacific R. R. on Lake Peigneur. 8-27

Mo., St. Louis—Ozark Lead Mining Corp., 917 Pine St., incorporated; F. M. Strickland, C. W. McCready.

N. C., Marble—Columbia Marble Co., capital \$200,000, chartered; C. Gomoll, Elberton, Ga.; T. R. Coggins, Jr., Marble. 10-22

Tex.—Texas-Gulf Sulphur Co., 75 E. 45th St., New York, advises no construction in view in connection with acquisition of sulphur rights on large acreage in Jefferson County. 9-29

### Miscellaneous Construction

Arkansas—U. S. Engr. Office, McCall Bldg., plans expending \$269,000 to construct concrete wall and levees, north and west sides U. S. Engr. supply and repair depot across river from Memphis; conc. wall to extend across entire river front of depot and will be built on sheet steel piling driven 30 ft. into the river bottom; floodgates will be provided to give access to riverfront in ordinary low water; levees will be built on north and west sides of depot 50 ft. high on Memphis river gauge; wall to have same elevation; about 200,000 cu. yd. earth will be placed in levees; retaining wall and floodgate at railroad opening to Bridge Junction, Ark.; 4000 ft. railroad track at new elevation to give communication in time of flood; \$114,000 sought for diverting county road near depot, erecting loading cradle and ramp, rail and barge terminal, moving buildings, filling and grading, additional spur tracks for unloading oil, condemned property warehouse, conc. and gravel roads, sidewalks, steps, grading river bank and constructing 66 pile clusters of 7 piles each.

outside for government boats; work to start upon approval of plans by Ch. of Engrs., War Dept., Washington.

Ark., Helena—U. S. Engr. Office, 1006 McCall Bldg., Memphis, Tenn., let contract to Lynch Bros., Chicago, at \$29,250, for 125,000 cu. yd. levee, White River Levee Dist. 10-15

Ark., Osceola—U. S. Engr. Office, McCall Bldg., Memphis, Tenn., let contract to Wheeling Corrugating Co., Wheeling, W. Va., at \$14,200, for 40,000 steel forms for use in casting conc. revetment slabs for bank protection work, Bullerton Bar. 10-29

Louisiana—U. S. Engr. Office, foot of Prytania St., New Orleans, has low bid from John I. McWilliams, New Orleans Bk. Bldg., New Orleans, at 10.24 cents per cu. yd. for 270,000 cu. yd. earth work, Second New Orleans Dist., Item L-895, Darrowville Levee, Pontchartrain Levee Dist. 10-22

Md., Baltimore—U. S. Engr. Office, 300 Customhouse, opens bids Nov. 4 for addition to existing wharf, U. S. Engr. reservation, Ft. McHenry.

Miss., Gulfport—Gulfport Port Comsn., James Dent, Pres., may provide additional wharf warehouse; may call bond election.

Missouri—U. S. Engr. Office, 1006 McCall Bldg., Memphis, Tenn., opens bids Nov. 10 for approx. 6000 cu. yd. earthwork, Birds Point-New Madrid Floodway Levee, Item R-15, 15R below Cairo, 187 ft. long, new levee, 18 ft. high.

Missouri—U. S. Engr. Office, 707 Postal Telegraph Bldg., Kansas City, opens bids Nov. 14 for 12,570 lin. ft. dikes, Delaware Bend.

Mo., St. Louis—U. S. Engr. Office, 428 Customhouse, let contract to M. A. Wogan, 511 Ry. Exch. Bldg., Kansas City, for \$51,060, for 3500 lin. ft. standard revetment, Missouri River, Dozier Bend, Mile 47 to 50. 10-1

Tex., Tyler—Texas Game, Fish & Oyster Comsn., Wm. J. Tucker, Exec. Sec., Austin, let contract to W. G. Cullom, 905 Allen Bldg., Dallas, at \$11,245, for fish hatchery addition.

Va., Fort Monroe—Office Corps Area Engr., 311 St. Paul Pl., Baltimore, Md., opens bids Nov. 13 for 4200 cu. yd. backfill behind seawall, Fort Monroe, Va.

Va., Newport News—Chesapeake & Ohio Ry. Co., C. W. Johns, Ch. Engr., Richmond, advises consideration has been given construction of merchandise pier here, but there is little likelihood of this work being undertaken at any time in near future. 8-14-30

### Miscellaneous Enterprises

Ala., Anniston—Calhoun County Creamery Co., Inc., chartered; Floyd McClellan, Leyden Hill.

D. C., Washington—Warren Spencer, 1350 Jonquil St., N. W., reported, will build factory 23rd St. for Neipold's Inc. (art dealer), 307 7th St., S. S.; 3 stories; brick and conc.; \$60,000.

Fla., Gainesville—Tung Oil & Turpentine Corp. incorporated; L. B. Alexander, W. P. Harden.

Fla., Tampa—Tampa Bay Ferry Co., Chas. H. Carter, Pres., advises have recently purchased of Atlas Imperial Engine Co., Oakland, Calif., two 200 h. p. engines to be installed in boat to be used as ferry boat by Tampa Bay Ferry Co. between Pinellas Point and Piney Point on Tampa Bay; construction work being done by Ganulet Ship Building Co., Slidell, La.; boat under construction. 8-20

Md., Baltimore—Royal Novelty Co., Inc., chartered; Benj. J. Fine, 2429 Linden Ave.

Md., Baltimore—Thrift Construction Co., incorporated; Alton T. Nichols, 3500 Wabash Ave.

Md., Baltimore—Baltimore Tube Co., 1301 Wicomico St., erecting plant addition; steel frame, metal siding, 110x251 ft., 1 story; Dietrich Bros., Pleasant and Davis Sts., Bldrs.

Md., LaPlata—Carl Insley, Leonardtown, acquired site for laundry.

Md., Leonardtown—Robt. Miedinski acquired Southern Bottling Co.

Mo., Cabool—Pevely Dairy Co., 1001 S. Grand St., St. Louis, recently acquired Piney Milk Co.; erect new plant; \$60,000; brick and tile; old condensary bldg. will be used for storage; initial unit, milk receiving building; later plans erection of processing plant.

Mo., Jefferson City—Missouri Valley Engineering Co., chartered; O. P. Grina, J. A. Able.

Mo., Kansas City—Weaver Glenn Printing Co., capital \$21,000, incorporated; Fred L. Glenn, 5834 Paeso.

Mo., Kansas City—Mason Building Co., incorporated; E. H. Leo Thompson, 201 Graphic Arts Bldg.

Mo., St. Louis—Marvin Amusement Co., capital \$25,000, incorporated; Julius Leventhal, 815 W. Gate St.

Mo., St. Louis—Royal Sweets, Inc., incorporated; S. W. Forman, 6651 Clemens St.

N. C., Biltmore, Asheville—Biltmore Woolens, Inc., capital \$50,000, chartered; F. P. Bacon, Tryon.

N. C., Canton—Champion Fibre Co., Reuben B. Robertson, Pres. and Gen. Mgr., let contract to Morton C. Tuttle Co., 31 St. James Ave., Boston, Mass., for erecting buildings; Moore & White Co., 15th St. and Lehigh Ave., Philadelphia, Pa., have contract for winders; Lynchburg Foundry Co., Inc., Peoples Bk. Bldg., Lynchburg, Va., for filters; Ingalls Iron Works Co., 720 Fourth Ave., S., Birmingham, Ala., for steel; by H. N. Saxton Co., Brownlow Bldg., Knoxville, Tenn., from Greer Lumber Co., for Portland timbers; B. & C. Lime & Stone Co., Flat Iron Bldg., Asheville, for gravel; by Canton Wholesale Supply Co., from Cumberland Cement Co., Cowan, Tenn., cement; Marshall Sand Co., Marshall, N. C., for sand. 10-29

N. C., Durham—Carolina Neon Signs, Inc., capital \$50,000, chartered; M. V. Lawrence, 213 Liberty St.

N. C., Winston-Salem—R. J. Reynolds Tobacco Co., reported, let contract to Virginia Bridge & Iron Co., Roanoke, Va., for 440 tons fab. struc. steel for 2 tobacco storage sheds at Tire-Town; conc. and steel; galv. iron sides; \$100,000; construction by owners; G. M. Poley, Archt. R. J. Reynolds Tobacco Co., advises two 2 story warehouses for storage tobacco in hogshead now under construction; all labor by company's forces; all material bought by Pur. Dept.; buildings with steel frame to be furnished by Virginia Bridge & Iron Co.; found of conc. in place; warehouses covered on exterior with corrugated galv. iron, wood second floor and wood roof; built-up roofing has been bought; buildings will be equipped with automatic sprinkler systems to be installed by company's forces; each building 110x242 ft.

S. C., York—J. C. Wilborn, reported, interested in having cheese plant established in city.

Tenn., Jackson—Kirby-Williams Implements Co., incorporated; John L. Williams.

Tenn., Johnson City—Unaka Fish Co., capital \$25,000, incorporated; W. M. Lesley.

Tenn., Knoxville—American Glass Corp., 510 N. Broadway, capital \$50,000, incorporated; Percy E. Guthrie.

Tenn., Knoxville—W. I. Kirby Construction Co., incorporated; W. L. Kirby, 802 Pierce St.

Tenn., Knoxville—Orange Crush Bottling Co., incorporated; John A. Connor, 113 W. Glenwood Ave.

Tenn., Knoxville—Ideal Cleaners & Dyers, Inc., capital \$20,000, chartered; John D. Stair, N. Hills Blvd.

Tenn., Memphis—Control of Commercial Appeal and Evening Appeal, reported, sold to Federal Receivers for Minnesota & Ontario Paper Co., Minneapolis, Minn., subject to Chancery Court approval.

Tenn., Madison—Hall Construction Co., capital \$25,000, chartered; Geo. T. Hall, Jr., G. H. Hall, Sr.

Tex., Corsicana—Rogers Salmon Construction Co., capital \$20,000, incorporated; H. T. Refers.

Tex., Corpus Christi—Mayfield Candy Co., Inc., chartered; R. C. Mayfield, 2818 Hulbert St.

Tex., Corpus Christi—Southern Alkali Corp., H. A. Gault, Pres., Barberton, O., subsidiary of Pittsburgh Plate Glass Co., 16 E. 40th St., New York, and American Cyanamid Co., 535 5th Ave., New York, having plans and specifications prepared for chemical plant; has 389 acres within 2 miles of turning basin of Port of Corpus Christi. 99-24

Tex., Dallas—Furnace Construction Co., Inc., chartered; R. M. Perry, Magnolia Bldg.

Tex., Dallas—Globe Cleaning Co., capital \$620,000, incorporated; J. C. Shumate, 2427 Emett St.

Tex., El Paso—Phelps Dodge Corp., 40 Wall St., New York, advises have indefinitely postponed plans for rod mill at El Paso. 10-1

Tex., Houston—Roe Co., Inc., chartered; H. J. Nichols, Marine Bk. Bldg.; advertising.

Tex., Houston—Thompson-Hayward Chemical Co., 2812 Center St., reported, acquired and will improve building, Oliver St., for chemical plant.

Tex., Lindale—Baker Products Co., incorporated with \$100,000 capital; C. C. Baker, Pres., 1915 Live Oak St., Dallas, establish plant for manufacture sweet potato chips.

Tex., San Antonio—Gray Properties, Inc., capital \$200,000, incorporated; M. W. Terrel, City Natl Bk. Bldg.; construction.

Tex., San Antonio—Carpenter Envelope Co. of Texas, capital \$25,000, incorporated; A. S. McLaren; leased portion of building 301 S. Flores St.; install 20 envelope machines; capacity 15,000,000 envelopes monthly.

Tex., Wichita Falls—Kemp Hotel Corp., incorporated; R. E. Huff, First Natl. Bank Bldg.

Va., Richmond—Mer-Cu-Vac Corp., capital \$25,000, incorporated; J. D. Davis, 2901 Monroe Ave.

Va., Strasburg—Virginia Rural Utilities incorporated; J. S. Cooley.

### Motor Bus Lines and Terminals

Mississippi—Following applied to Mississippi Railroad Comsn., Jackson, for bus permits: Mississippi Transportation Co., for line from Meridian through Oakton to Vicksburg via Highway No. 80, line from Newton to Collins via Laurel via Highway 15 and 22 and line from Jackson to Gulfport via Hattiesburg via Highway 49; Drew Bus Line Co., for line Clarksdale to Tennessee en route to Memphis via Highway 61; Motor Transportation Co., from Jackson to Natchez; H. M. Wheeler for franchise for route Hattiesburg to Natchez; Howard W. Thomas for bus line from Laurel to State Colony.

Mo., Springfield—Independent Cab Co., chartered; A. C. Dennis, Everett E. Read.

Va., Alexandria—Victor Cab Co., Inc., 417 Warren Ave., Aurora Hills, incorporated; Frank G. Campbell.

Va., Norfolk—State Corp. Comsn., Richmond, reported, approved certificate of authority to Edgerton Bus Lines for passenger service, Norfolk and Suffolk.

### Railways

Ky., Louisville—Louisville & Nashville R. R. Co., H. T. Shanks, Gen. Pur. Agt., reported, ordered 22,000 tons steel rails and approx. 3,000 tons accessories from Tennessee Coal, Iron & Railroad Co., Birmingham, Ala., involving \$1,000,000.

Md., Baltimore—American Bridge Co., 71 Broadway, New York, reported, has contract for 500 tons girders in connection with electrification of Pennsylvania R. R. Co., W. B. Wood, Engr. in charge Baltimore Improvements, Pennsylvania Sta., Baltimore. 10-15

Md., Baltimore—Western Maryland Ry. Co., M. E. Towne, Gen. Pur. Agt., reported, ordered steel as follows: 1000 tons 130-lb. rail, Carnegie Steel Co., Pittsburgh, Pa.; 1000 tons 130-lb. rail, Bethlehem Steel Co., Pittsburgh, Pa.; 225 tons attachments, Jones & Laughlin Steel Corp., Pittsburgh, Pa. and 110 tons attachments, Republic Steel Corp., Youngstown, Ohio.

Texas—Texas & New Orleans R. R. Co., R. W. Barnes, Ch. Engr., Houston, subsidiary Southern Pacific Ry. Co., G. W. Boschke, Ch. Engr., San Francisco, Calif., reported, expending \$3,000,000 building and connecting up for new railway line between San Angelo and San Antonio; rail laying with own forces. 10-29

Texas—Atchison, Topeka & Santa Fe Ry. M. J. Collins, Gen. Pur. Agt., Chicago, Ill., ordered rail; Colorado Fuel & Iron Co., Continental Oil Bldg., Denver, Colo., 21,562 tons; Illinois Steel Co., 208 S. La Salle St., 5,412 tons, and Inland Steel Co., 33 S. Clark St., both Chicago, Ill., 5,412 tons. 10-15

Va., Roanoke—Norfolk & Western Ry. Co., A. C. Needles, Pres., expend approx. \$225,000 building 10 22,000-gal. locomotive tenders and repairing 500 57½-ton hopper coal cars at Roanoke shops; start work upon completion of similar equipment.

### Roads, Streets and Paving

In connection with LAND DEVELOPMENT large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

### Proposed Construction

D. C., Washington—Public Buildings and Public Parks Comsn., 1031 Navy Bldg., probably take bids at once for grading and moving trees in Mall and W. Potomac Pkwy.

Florida—State Road Dept., Robt. W. Bunting, Chmn., Tallahassee, plans starting work early in 1932 on Lake Front Blvd. Route along Lake Shore and conc. bridge over St. Johns River, Lake Monroe.

**FLORIDA**—State Road Dept., Robt. W. Bentley, Chmn., Tallahassee, opens bids Nov. 10 for 2 roads in following counties:

**Okaloosa**—9.16 mi. grading, draining, 7.36 mi. sand clay surface, Forest Proj. 3-A, Road 218, Walton County line to Niceville;

**Walton**—3.18 mi. grading, draining, Proj. 1029, Road 218, Mossyhead to Forest Proj. 3-A.

**Georgia**—State Highway Bd., J. W. Barnett, Chmn., Atlanta, will let road contracts at November meeting.

**KENTUCKY**—State Highway Comsn., H. D. Palmore, Engr., Frankfort, opens bids Nov. 24 for 3 roads in following counties:

**Christian**—10 mi. grading, draining, Hopkinsville-LaFayette road, Herndon to Tenn. state line near LaFayette;

**Henderson**—riprap or slope paving, east approach to Spottsville toll bridge;

**Monroe**—1.6 mi. grading, draining, Gamaliel-Tennessee State Line road, Gamaliel to Tenn. state line.

**La., Mer Rouge**—City, Mayor and Bd. of Aldermen, opens new bids Nov. 16 for paving Davenport Ave.; O. F. Reiszner, Engr., Barrett Bldg., Alexandria. 10-8

**MARYLAND**—State Roads Comsn., L. H. Steuart, Sec., opens bids Nov. 10 for 6 roads in following counties:

**Allegany**—6.13 mi. conc., Oldtown-Paw Paw road, Town Creek to Paw Paw, A-111-64;

**Baltimore**—0.11 mi. sheet asphalt, track area on Belair road, Overlea Ave. to Baltimore City line, B-194-42;

**Calvert**—1.0 mi. gravel, Dunkirk toward Ferry Landing, and 0.91 mi. gravel, Southern Maryland Blvd.-Mt. Harmony road toward Owings, C-56-84;

**Montgomery**—0.50 mi. conc., widening Montgomery Ave. through Rockville and Washington St. approach, M-178-32;

**Prince George**—6.43 mi. Ritchie toward Upper Marlboro, P-155-84;

**Cecil**—250 ft. conc. along east side Bridge St., Elkton, C-121-23.

**MARYLAND**—State Roads Comsn., L. H. Steuart, Sec., Baltimore, has low bids for 6 roads and 3 bridges in following counties:

**Allegany**—superstructure (double 102 ft. span steel truss) for bridge over Town Creek, road from Oldtown to Paw Paw, A-109-64, Roanoke Iron & Bridge Works, Roanoke, Va., \$15,960;

**Harford**—0.60 mi. conc. shoulders, Bond St. and Belair Rd., Belair, H-134-411, P. Reddington & Sons, 2 E. Lexington St., Baltimore, \$11,830;

**Montgomery**—1.0 mi. conc., Dickerson-Mt. Ephriam road, and 0.96 mi. macad., Martinsburg road, M-181-55, M. J. Grove Lime Co., Lime Kiln, \$33,919; 0.73 mi. conc. and conc. girder bridge, Massachusetts Ave., D. C. line to Little Falls Branch, M-189-35, Loomis Construction Co., Inc., 1010 Wisconsin Ave., N. W., Washington, D. C., \$25,002; double span conc. slab bridge, road from Bucklodge to Dawsonville over Bucklodge Branch, M-191-57, J. S. Bowers, Whiteville, N. C., \$7286; 0.53 mi. comb. curb and gutter, Frederick Ave., Frank J. Byron, 638 Register Ave., Baltimore (only bidder), \$7875;

**Washington**—1.0 mi. macad., Timber Ridge road, National Pike east of Hancock toward Pa. state line, W-99-64, Bester-Long Co., 441 S. Potomac St., Hagerstown, \$22,729.

**Maryland**—State Roads Comsn., Harry D. Williar, Jr., Ch. Engr., Baltimore, plans improving road into Fort Smallwood riverfront park in time for use next summer; \$157,000.

**Mo., Clayton**, St. Louis—St. Louis County, Roy Jablonsky, Highway Engr., has low bids totaling \$371,533 for paving 20-ft. slab conc., Wild Horse Creek road, 30,529 ft., George W. Condon, \$209,447; 21-ft. conc., Woods' Mill road, 9100 ft., Keeley Bros. Contracting Co., 4301 State St., \$72,163; 20-ft. conc. slab, Laclede Sta. road, 3950 ft., Independent Quarry & Construction Co., 3650 Chonto St., \$32,982; widening Olive St. road to 40 ft., overlaid with asphalt composition, Moore Bros. Construction Co., Edgar Ave., all St. Louis, \$32,559; gravel strip, Horneker road, 1700 ft., Industrial Construction Co., \$8975; 1-ft. macad., Bernard Ave., Industrial Construction Co., \$15,427. 10-22

**Mo., Kansas City**—City Council approved ordinances for improvements this winter under 10-yr. plan, including \$300,000 for trafficways; Brush Creek improvements, \$150,000; street signs and underpasses, \$50,000.

**Mo., Kansas City**—Jackson County Highway Engineering Dept., Leo E. Koehler, Highway Engr., 508 Interstate Bldg., has apparent low bids for grading, draining, conc. paving, bridges: 9.2 mi., Raytown road, A. A. Davis, Cotton Grain Exch. Bldg., Oklahoma City, Okla., \$239,302; 2 bridges

on same, Massman Construction Co., 519 Amer. Bk. Bldg., Kansas City, \$16,970; Sni-a-Bar road, J. A. Tobin Const. Co., 7601 Myrtle St., Kansas City, \$26,730; 1 mi., Blue Springs road, C. H. Atkinson, Kansas City, \$21,714; 79th St. and Ward Pkwy., A. A. Davis, \$21,049, 2 projects withdrawn from letting, including 7.9 mi., Noland St. road, U. S. Highway 50 to city limits of Independence, and Blue Ridge cut-off, Blue Ridge extension to Leeds road; readvertise at once. 10-22

**OKLAHOMA**—State Highway Comsn., Sam R. Hawks, Chmn., plans receiving bids for 13 roads (grading unless otherwise designated) and bridge in following counties:

**Tulsa**—State No. 11, Verdigris bottoms near Inola;

**Atoka**—22.6 mi., No. 19, Atoka east to county line;

**Canadian**—U. S. 66, 7 mi. west of El Reno to Bridgeport bridge;

**Jackson**—5 mi., State 34, Elmer bridge north;

**Jackson-Harmon**—13 mi., U. S. 63, Duke to Gould;

**Jefferson**—10 mi., U. S. 70, Waurika east;

**Johnston**—15 mi., State 48, north of Tishomingo and first section south of Ada;

**Leflore**—15 mi., U. S. 270, Hodgen to Arkansas line;

**Murray**—6.5 mi., State 22, Sulphur to Scullin;

**Seminole-Pottawatomie-Lincoln**—11.6 mi., State 48, north from Seminole to Prague;

**Grant**—gravel, U. S. 64, Nash east to U. S. 81;

**Kiowa**—gravel, State 14, Snyder to Frederick, and State 9, Mountain View to Carnegie;

**Grady**—gravel, U. S. 81, Mince to Pocasset;

**Comanche**—bridge over Cache Creek, west of Lawton, U. S. 62.

**Oklahoma**, Tulsa—City, H. A. Parker, City Engr., surveying S. Boulder Ave. with view to widening by at least 12 ft., 11th to 18th.

**S. C., Greenville**—Greenville County, Jack Wier, County Engr., has low bid from Carolina Road Surfacing Co., Capers Bldg., for 6.6 mi. surface treatment, either double bitum. or penetration macad. 10-15

**TEXAS**—State Highway Comsn., Gibb Gilchrist, Highway Engr., Austin, plans 16 roads and 5 bridge projects in following counties:

**Refugio**—17.740 mi. rein. conc., Highway 128, San Patricio County line toward Refugio, SAP 840-A, U it 2, \$326,000;

**San Patricio**—4,340 mi. rein. conc. (water cement ratio 9x6x9), Highway 12, 1.5 mi. northeast Mathias to Bee County line, FAP 572-E, Unit 2, \$70,000;

**Wilson**—9,902 mi. grading, draining, Highway 123, Guadalupe County line west to Stockdale, SAP 769-E, Unit 1, \$49,000;

**Navarro**—7 mi. graveling, Highway 31, end present 9-ft. conc. slab to Dawson;

**Runnels**—14.89 mi. resurfacing and asphalt topping, 1.5 mi. north of Hatchell to Taylor County line, including high water bridge and replacement where necessary; county to furnish gravel;

**Smith**—16 mi. asphalt seal coat, 1 mi. re-basing and double bitum. surface treatment and rebuilding 75 lin. ft. timber trestle on 22.5 mi., Highway 31, 2 mi. northeast Tyler to Gregg County line;

**Bexar**—bridges over Salado and Gibilo Creeks, Highway 3-A, SAP 985-D.

**Pecos**—24,842 mi. caliche base with triple bitum. surface treatment, Highway 27, 7 mi. west Fort Stockton to Reeves County line, FAP 612-B, Unit 2, \$209,600;

**Presidio**—13,175 mi. grading, draining, Highway 17, Bunton Flat to Cohoa road, including several large bridges, SAP 970-C, Unit 1, \$262,000;

**Bastrop**—57 mi. grading, draining, graveling with double bitum. surface treatment, Highway 20 through Paige, M-14-V-4, \$4537;

**Delta**—rebuilding 320 lin. ft. bridge and necessary approaches over Jernigan Creek bottoms, M-1-Z-5, 2, \$20,765;

**Comanche**—6.18 mi. surfacing with caliche, Highway 10, Comanche to Rush Creek, M-2-V-3, \$9440;

**Navarro**—6,340 mi. grading, draining, Highway 22, Corsicana to west line Consolidated Road Dist. No. 1, SAP 565-A, Unit 1, \$30,750;

**Wilson**—9,902 mi. grading, draining, Highway 123, Guadalupe County line west to Stockdale, SAP 769-E, Unit 1;

**Tyler-Jasper**—454 mi. grading, draining, Highway 40, south end FAP 606-A, Sta. 0 plus 00 to Sta. 24 plus 00, FAP 606-C, Unit 1, \$4950;

**Comanche**—7.80 mi. placing additional caliche on base, Highway 81, De Leon to south end Rush Creek bridge, M-2-U-3, \$10,400;

**Bowie**—6.20 mi. widening grade and lengthening drainage structures, gravel base with double bitum. surface treatment, Highway 5, 1.85 mi. east of Hooks to 4.35 mi. west

**Hooks**, M-1-A-6, \$35,000;

**Bexar**—247 mi. crusher run broken stone base course and  $\frac{1}{2}$  in. rock asphalt surface treatment, Highway 81, Salado Creek east, M-15-V-3, \$2860;

**Falls**—7.68 mi. single bitum. surface treatment, Highway 6, Marlin to Robertson County line with exception 6 mi. east side railroad, \$4750;

**Hopkins**—rebuilding 7 bridges, Highway 11, 4 mi. south of Sulphur Springs to about 4 mi. north of Sulphur Springs, M-1-Y-5, \$19,000;

**Sutton**—5.0 mi. double bitum. surface treatment, Highway 27 between Sonoro and Kimble County line, M-7-R-2, \$10,400.

**Texas**—State Highway Comsn., Gibb Gilchrist, Engr., Austin, allotted approx. \$275,000 for maintenance and construction, to come from county and state funds; State Highway Engr. authorized to draw plans and call for bids for resurfacing and asphalt topping 14.8 mi. asphalt road 1.5 mi. north of Hatchell to Taylor County line, Runnels County, including high water bridges; also to proceed with plans and to let contract for Unit 1, Catarina, Dimmit County, to Webb, Webb County; also to apply to War Dept., Washington, for approval of plans for bridge over Nueces River, Highways 9 and 128 between Cal Allen and Sinton, Nueces-San Patricio Counties.

**Tex., Austin**—Travis County will co-operate with State Highway Comsn., Austin, in 4 projects after Jan. 1: New Post road south, 400-ft. gap at Oak Hill, 68-ft. conc. bridge and culvert, Del Valle, to eliminate dip, conc. bridge, Fiskville, replacing dip over Fisk Branch of Walnut Creek.

**Tex., Beaumont**—City, R. C. Black, City Engr., opens bids Nov. 10 for paving 2 stretches Fourth St.

**Tex., Houston**—City, J. M. Nagle, City Engr., plans improving Holly St. and 75th St.

**VIRGINIA**—State Dept. of Highways, C. S. Mullen, Ch. Engr., Richmond, opens bids Nov. 17 for 3 roads and bridge in following counties:

**Henrico**—0.92 mi. widening pavement, Route 39, from east city limit of Richmond; **Campbell**—bridge over Flat Creek, Route 43, near Evington;

**Pittsylvania**—2 mi. soil, Route 57, 6.5 mi. east of Chatham to 4.4 mi. east of Chatham;

**Halifax**—3 mi. soil, Route 75, 10 mi. east intersection 75 with 12.

**Virginia**—State Dept. of Highways, C. S. Mullen, Ch. Engr., Richmond, approved 1.5 mi. extension Route 12, Alexander's corner to connect with High St., Portsmouth.

#### Contracts Awarded

**KENTUCKY**—State Highway Comsn., H. D. Palmore, Engr., Frankfort, let contracts or has low bids for 8 roads (grading, draining except as otherwise designated) and bridge in following counties:

**Boyd**—1,386 mi., Ashland-Russell road, F. A. 201 AG, Ashland Supply Co., Ashland, \$61,049 (low bid);

**Christian**—15,151 mi., Hopkinsville-Princeton road, S. P. 10 BG, R. F. Pryor & Co., Mayfield, \$95,975 (low bid);

**Barren**—5,184 mi., Cave City-Hiseville road, S. P. 11 AG, J. B. Westerfield, Owensesboro, \$21,595;

**Butler**—3,133 mi., Morgantown-Caneyville, S. P. 83 AG, Campbell & Co., Bowling Green, \$27,730 (remainder of project held in abeyance);

**Calloway**—4,630 mi. surfacing, Murray-New Concord road, S. P. 119 AS, N. E. Stone & Co., Madisonville, \$8076;

**Floyd**—5,286 mi., Martin-Weeksbury road, S. P. 237 AG, Campbell-Johnson Co., Pikeville, \$43,830;

**Muhlenberg**—7,103 mi., Greenville-Rochester road, S. P. 65 AG, Young & Lyons, Rogersville, Tenn., \$47,331 (balance held in abeyance); 3,152 mi., Central City-Island road, S. P. 77 AG, E. O. Korsmo, Memphis, Tenn., \$18,584;

**Todd**—bridge over L. & N. R. R., Russellville-Guthrie road, and approaches, F. A. 202 BB, Frazer & Cocks, Wickliffe, \$7594. 9-24

**LOUISIANA**—State Highway Comsn., O. K. Allen, Chmn., Baton Rouge, let contracts on 75 roads to low bidders, with exception of 2 projects in Acadia and one in Beauregard Parishes, temporarily held up, and 6 projects let as follows in following parishes:

**Evangeline**—5,019 mi. gravel, Pine Prairie-Beaver road, Savoy & Fontenot, Mamou, \$19,983; 4,646 mi., Ville Platte-Tate Cover project, John Lahayne, Ville Platte, \$16,284;

**Franklin**—4,583 mi. gravel between Lidle and Fort Necessity, Halbert & Williams Co., Inc., Delhi, \$19,432;

**Webster**—6,106 mi. grading, draining, Route 182, Leathers & Martin, Alexandria, \$18,357. 19-29

Tex., Fort Worth—City, Geo. Fairtrace, City Mgr., let contract to West Texas Construction Co., at \$26,792, for paving Main St. underpass at Texas & Pacific tracks. 10-22

Tenn., Maryville—City Comsn. let contract to Brown Construction Co. for paving 3 additional streets.

Tex., El Paso—City let contract to West Texas Construction Co., Two Republics Bldg., at \$140,515, for paving.

### Sewer Construction

**Sewer construction in LAND DEVELOPMENT projects involves the expenditure of large sums of money. Under that classification details of these improvements are reported.**

D. C., Washington—Washington Suburban Sanitary Comsn., Tower Bldg., approved extension of sewer and water mains in Woodside, North Kensington and Greater Capitol Heights.

D. C., Washington—Warren F. Brenizer Co., 1301 S. Capitol St., has contract for Arizona Ave. storm water sewer and Wm. A. Pate, Evans Bldg., for P St. replacement sewer.

D. C., Washington—Dist. Comms., Dist. Bldg., let contract to Bright-Shepherd Co., Inc., 1415 K St., N. W., at \$14,209, for Upper Hickey's storm water sewer.

Ky., Louisville—Henry Bickel Co., 435 Garden St., Louisville, low bidder at \$89,598, for Montana Ave. sewer; 4760 ft. of 7 ft. 1½ in. and 54-in. rein. conc. sewer; work under direction of Comms. of Sewerage. 10-15

La., New Orleans—A. P. Boh & Co., 837 Perdido St., New Orleans, reported, low bidder for extension c. i. pressure mains, Contr. 111-S and for construction 36-in. c. i. connection from drainage pumping station No. 7 to pressure main Florida ave. 10-22

Md., Baltimore—Frank Angelozzi, 123 S. High St., reported, low bidder for sewers, Storm Water Cont. No. 169. 10-22

Md., Northeast—See Water Works.

Mo., Kansas City—Finance Committee approved appropriation of \$250,000 from bond funds for sewer work this winter. 8-4

Mo., Springfield—Will F. Plummer, Union Natl. Bk. Bldg., Springfield, reported, low bidder for sewers and pumping station for Washington, Dept. of Justice.

Mo., St. Louis—See Want Section—Bids Asked.

Okl., Ponca City—City votes in Nov. on \$40,000 sewer bonds.

Okl., Tulsa—City soon call for bids for proposed storm sewers for West Tulsa approach to new Arkansas River bridge.

Tex., Houston—See Want Section—Bids Asked.

Tex., Mount Pleasant—Brown & Root, Inc., 4300 Calhoun St., Houston, reported, have contract for sewer disposal plant.

Va., Fort Humphreys—Hughes & Keegan, Inc., Real Estate Exch. Bldg., Richmond, reported, low bidder for water distributing and sanitary sewer system.

Va., Richmond—See Want Section—Bids Asked.

W. Va., Parkersburg—City, L. G. Merrill, City Engr., have plans for construction system sanitary sewers, Sanitary Sewer Dist. No. 2; probably receive bids Nov. 17; project involves 14,800 ft. of 6-in., 16,800 ft. of 8-in., 2000 ft. of 10-in., 1250 ft. of 12-in., 5350 ft. of 15-in. vit. sewer pipe and specials; 375 ft. c. i. pipe; 99 brick manholes; 45,000 cu. yds. earth excavation. 10-9

### Telephone and Radio

Ark., Little Rock—Edmund G. Hilger applied to Federal Radio Comsn. for construction permit.

Miss., Laurel—WTS, G. A. Houseman, granted construction permit by Federal Radio, Comsn., remove station from Shreveport, La. to Laurel.

Okl., Ponca City—Aeronautical Radio, Inc., applied to Federal Broadcasting Comn. for construction permit.

Okl., Oklahoma City—KNAV, Aeronautical Radio, Inc., applied to Federal Broadcasting Comn. for construction permit.

Okl., Tulsa—KNAV, Aeronautical Radio, applied to Federal Broadcasting Comn. for construction permit.

### Telephone Systems

D. C., Washington—Chesapeake & Potomac Telephone Co., John A. Remon, Gen. Mgr., reported, plans expenditure of \$1,340,000 for additional facilities, including erection of central office building, Wisconsin Ave. and Warren St. (now under construction), installation of switchboards, central office equipment and power plant apparatus; improvements and extension underground conduit and cable system, etc. 8-6

Maryland—Bd. of Directors of Chesapeake & Potomac Telephone Co. of Baltimore City authorized capital expenditures for new plant and equipment to be added to telephone systems in Maryland bring total amount authorized for similar projects in state to \$4,450,997; projects include underground conduit and cable extensions in Gilmor and Wolfe central office areas; pole replacement in Pikesville and additional aerial cable facilities at Hyattsville; Hyattsville project provides for extending aerial cable along Baltimore-Washington Blvd. to provide facilities for houses now under construction.

Virginia—Chesapeake & Potomac Telephone Co., Richmond, reported, authorized expenditure of \$54,000 for installation of additional dial equipment in Richmond to serve 1900 new telephone and 10 trunk lines; project was included among others in Roanoke, Lynchburg, Radford, Danville, Norton, Big Stone Gap, making total amount appropriated this year \$3,150,017; additional facilities to be provided at Roanoke will cost \$65,000; work involves cables and poles and long distance facilities; work in Lynchburg, including improvements to long distance transmission, cost \$50,000; at Radford a new power plant and carrier channel equipment will be installed, cost \$71,500; in Danville, cost of improvements \$10,000; new equipment at Norton, cost \$16,250; cable connecting Appalachia and Big Stone Gap, \$7395; pole replacement between Covington and Hot Springs, \$5720. 10-15

### Textile Mills

Ga., Newnan—Newnan Hosiery Mills, R. A. Fields, reported, have plans by Robert & Co., Engrs., Bona Allen Bldg., Atlanta, for dye house; 1 story and basement; 30x60 ft.; conc. frame; brick walls; wood deck roof; skylights steel sash; construction by company's forces.

Ky., Nicholasville—J. R. Keller, Chm., Textile Committee, reported, sell \$35,000 in preferred stock for rayon garment plant; Louis Terry Corp., 500 Throop St., Chicago, Ill., will operate plant. 10-15

Md., Cumberland—Celanese Corp. of America making addition for purpose of extending facilities of dye house and comprises 1 story, tile and steel building, with saw tooth roof, covering ground area of 60x174 ft.; will be used for housing additional finishing machinery for company's fabrics; cost of building without appurtenances \$20,000; cost of equipment \$100,000; contract for building let to Wright Richardson Co., Inc., Citizens Bank Bldg., Cumberland. 10-29

Miss., West Point—Apona Mfg. Co., J. W. Sanders, Pres., Jackson, receives bids Nov. 9, change of date, at office of Robert & Co., Engrs., Bona Allen Bldg., Atlanta, for construction mill unit; 1 story; 237x133 ft.; rein. conc.; struc. steel; brick walls; steel sash; comp. roof. 10-29

N. C., Charlotte—Walter Lambeth, 608 Providence Road, reported, acquired plant of Rock Hill Hosiery Co., on Kingston Ave.

N. C., Gastonia—C. L. Upchurch & Sons, Southern Mutual Bldg., Athens, Ga., reported, acquired at private sale from W. L. Balthis, Receiver, machinery and mechanical equipment of Avon Mills, Inc.

N. C., Gastonia—Walker Engineering Co., reported, has contract for engineering work for improving Osceola Mills; portion of present equipment will be dismantled and equipment from Helen Yarn Mills installed. 10-8

N. C., Ronda—Stockholders of Hamilton-Wilco Mills, reported, considering re-opening plant; may construct cotton mill addition.

S. C., Hartsville—Hartsville Print & Dye Works, reported, acquired Cedartown, Ga., plant; enlarge local plant; remove machinery from Cedartown.

S. C., Laurens—Katterman & Mitchell, Paterson, N. J., reported, acquired building formerly occupied by Pioneer Braid Corp.; recondition; remove looms and other equipment from plant at Paterson.

Mayor T. Jefferson Campbell, Lenoir City, Tenn., reported, negotiating with capitalists for establishment ladies' seamless hosiery mill; cost \$500,000; considering locations at Lenoir City, Chattanooga and Knoxville.

### Water Works

**Details of water works improvements in connection with the many LAND DEVELOPMENT operations will be found under that Classification.**

Ala., Birmingham—Christie, Hutchison & Burton, 502 N. 21st St., has contract for water, sewer, lines, and drains for elevated train platforms; A. J. Hawkins, City Engr.

Fla., Lake City—McClelland Co., Latta Arcade, Charlotte, N. C., reported, low bidder at \$25,500, for constructing and finishing complete water supply system for U. S. Veterans Hospital; work includes excavating, rein. conc., hollow tile, cast stone, built-up roof, steel water tank and tower, Zeolite water softening system and outside sewers, water distributing system and electric service connection. 10-15

Fla., Miami Beach—City negotiating with G. O. Palmer, receiver for Biscayne Bay Island Corp., for water plants on Rivo Alto and Di Lido islands.

Ky., Versailles—City, W. C. McCauley, Mayor, plans expending \$50,000 extension water system; 6 mi. c. i. main; votes in Nov. on bonds; install pumps at river; Howard K. Bell, Engr., Lexington. 10-5

Md., Baltimore—Industrial Piping & Engr. Co., Court Square Bldg., reported, low bidder for installation steam heating system in Mt. Royal Pumping Station. 10-22

Md., Baltimore—See Want Section—Bids Asked.

Md., Frostburg—City Council authorized Abel Wolman, 2411 N. Charles St., Baltimore, to draft plans for filtration plant; work begin in April. 10-8

Md., Frederick—City, reported, soon receive bids for materials for water distribution system; cost \$35,000; Whitman, Requardt & Smith, Engrs., Baltimore Trust Bldg., Baltimore. 6-11

Md., North East—City engaged J. B. McCrary Corp., N. Y. Ave. and Bladensburg Rd., Washington, D. C., to prepare plans and estimates on water and sewer system.

Md., Rockville—Eugene B. Gingrell, reported, has contract for pump for water system; Whitman, Requardt & Smith, Engrs., Baltimore Trust Bldg., Baltimore, soon take bids on erection pump house. 8-27

Mo., Kansas City—Finance Committee approved appropriation of \$1,000,000 from bond funds for water works improvements this winter. 6-4

Mo., Lees Summit—City votes Nov. 10 on \$40,000 electric and \$10,000 water works bonds.

Mo., St. Louis—City, Water Div., 1640 S. Kingshighway Blvd., John B. Dean, Div. Engr., Supply & Pur. Section, having plans drawn for 4 basins 150x150 ft. and 1 basin 406x300 ft.; rein. conc.; 15 ft. deep; no machinery except gates and valves will be installed; engineering work being done by Water Div.

N. C., Canton—Town, D. J. Kerr, Mayor, reported, has plans for supplementary water system to cost \$75,000; plant will be located near city and will take water supply from Pigeon River; issue of \$75,000 bonds to finance project approved by Local Government Comsn., Charles M. Johnson, Dir., 224 Hillcrest St., Raleigh; Charles E. Waddell Co., Arcade Bldg., Asheville, Engrs.; work by local labor. 10-29

Okl., Nichols Hill, Oklahoma City—Bennam Engineering Co., Perrine Bldg., Oklahoma City, reported, has preliminary plans for deep well water supply system; \$18,000.

N. C., Charlotte—City, reported, call election to vote on acquiring airport.

Okl., Turley—W. B. Carter, 7 N. Rockford St., Tulsa, reported, has contract for water works improvements; W. F. McMurray, Consit. Engr., 15 W. Seventh St., Tulsa.

Tex., Corpus Christi—City, Edwin Flato, Mayor, reported, rejected bids, opened Oct. 29, for La Fruta dam rehabilitation; Robt. J. Cummins and Henry E. Elrod, 1105 Nixon Bldg., Corpus Christi, and 727 Bankers Mortgage Bldg., Houston, Consit. Engrs. 10-15

Tex., Randolph Field, San Antonio—Kirkwood, Wharton & Lee, 517 Flores St., San Antonio, reported, has contract for conc. covered underground reservoir. 8-27

W. Va., Williamstown—City votes Nov. 17 on \$20,000 water bonds.

### Woodworking Plants

N. C., Marion—Drexel Furniture Co., S. B. Hildebrand, Supt., erecting plant addition and replacing several machines; addition 30x60 ft., to be used as glue room.

## CONSTRUCTION DEPARTMENT

## Manufacturers Record

N. C., Wilmington—J. N. Bryant, Hilton St., reported, acquired plant, site and equipment of Wilmington plant of Aladdin Co., Bay City, Mich., manufacturers of ready-made houses; make changes in equipment to manufacture furniture parts.

Va., Martinsville—American Furniture Co., O. D. Ford, Pres., advises plant was not destroyed by fire, as lately noted; practically no fire damage, only water damage; plant now running full force. 10-29

## FIRE DAMAGE

Ala., Greensboro—Unit of Greensboro Warehouse, J. A. Blount, owner, loss \$40,000; operated by Greensboro Warehouse Co., Inc.

Ala., Montgomery—T. Segall's merchandise store, 307 S. Decatur St.; loss \$10,000, including contents.

Fla., Daytona Beach—McClellan Novelty Works; loss \$15,000.

Ga., Augusta—Culpepper Bros.' furniture store, 1019-21 Broad St.

Ky., Georgetown—Herndon Waller's tobacco barn.

La., New Orleans—New Orleans Chair Co.'s plant, 731 Tchoupitoulas St.; loss \$80,000.

La., New Orleans—Sash and door plant: J. T. Kirn, owner, 3310 Cleveland St.; loss \$20,000.

Md., Easton—Harry Dyott farm residence, Goldsborough Neck, 5 miles from Easton; loss \$10,000.

Miss., Claremont—J. R. Adams' residence.

Miss., Durant—Bldg. owned by P. M. Elmore, occupied by White House Cafe, Western Union, Dickey dry cleaning plant and Mississippi Power & Light Co. office; loss \$25,000.

Miss., Edwards—Warehouse of Liverpool Cotton Warehouse Co.

Miss., Leaf—Baptist Church.

Mo., Carthage—Moore Hardware Co.; Gart Wallace's 5-10-15 cent store; loss about \$25,000.

Mo., Doniphan—Sol Wall's business bldg.; loss \$20,000.

Mo., Kansas City—E. C. Warwick's residence near Winnwood Lake; loss \$9500.

N. C., Lexington—Feed and dairy barn, Junior Orphans Home; loss \$7000.

N. C., Lumberton—Tobacco warehouse operated by J. B. Davis, Martinsville, Va.

N. C., Sanford—Barn on R. W. Craig's farm near Sanford.

S. C., Blackstock—Durham Mercantile Co.'s cotton warehouse.

S. C., Early Branch—Sawmill owned by Liberty Lumber Co., Savannah Bk. & Tr. Bldg., Savannah, Ga.

Tenn., Cleveland—Plant of Southern Cold Storage Co., owned by T. L. Rogers; loss \$40,000.

Tenn., Memphis—Plant of Empire Floor & Lumber Co., 181 W. Mallory St.; loss \$75,000.

Tex., Arp—Crim Theater; Riskins Dry Goods Store; Arp Drug Store; A. O. Tannehill Barber Shop; McMillan & Adair Restaurant; Arp Bowling Alley; loss about \$100,000.

Tex., Austin—Texas Tobacco Co.; Checker Front Stores' warehouse; Marks Grain Co., all 204 E. Fourth St.; loss \$75,000.

Tex., Canadian—Queen Theater, Frank Cole, owner; loss \$25,000.

Tex., Gonzales—Clyde Slaton's residence 8 miles from Gonzales.

Tex., Humble—Methodist Church and Sunday school annex; loss \$10,000.

Tex., Spicewood—Tom Hammond's residence.

Tex., Waco—Building on Jackson St. occupied by Item Biscuit Co., and Texas Paper Co.

Va., Pulaski—Machine shops of Virginia Iron, Coal & Coke Co.

Va., Saluda—Dr. H. F. Hoskins' residence; loss \$10,000.

Va., Lynchburg—City, R. W. B. Hart, City Mgr., rejected bids for armory-market, 13th and Main Sts.; to revise plans and readyvertise for bids; Johnson & Brannan, Archts., Peoples Natl. Bk. Bldg. 10-8

## Dwellings

Ala., Birmingham—Sam E. Batson, 1621 Roseland Drive, erect brick veneer residence, Edgewood; 1 story and basement, 51x33 ft., comp. roof, steam heat; Edw. D. Slater, Archt., 1300 N. Eighth Ave.; bids in.

D. C., Washington—Louis Gugman, 2341 Pennsylvania Ave., S. E., erect brick and hollow tile residence, 2349 R St., S. E.; 2 stories, 32x22 ft., slate roof, hot water heat; Thos. J. Jones, Archt., 4309 Dewey Ave.

D. C., Washington—Harris Shapiro, 307 Taylor St., N. W., has permit for 2 masonry dwellings, 3634-36 Jocelyn St., N. W.; 2 stories, total \$16,500.

D. C., Washington—M. E. Locke, 2500 Calvert St., N. W., erect brick, hollow tile, stone, rein. conc., struc. steel and orna. iron residence, Observatory Circle and W St.; tile floors, steel sash, kalamein doors, slag and copper roof, elevator, incinerator; Waddy B. Wood, Archt., 726 Jackson Place.

D. C., Washington—B. H. Pluger, Oxen Hill, Md., R. D. from Anacostia, Washington, erect brick residence, 31st St. and Alabama Ave., S. E.; 2 stories, 25x27 ft.; Geo. T. Santmyers, Archt., 925 15th St., Washington.

Fla., Miami Beach—J. G. Hundley, 1661 Alton Rd., erect \$15,000 residence and garage; G. J. P. Jacques, Archt., 609 Collins Ave.; may erect by day labor.

Ga., Atlanta—Wayne D. Smith, 363 Park Way Drive, N. E., let contract to Yost Construction Co., Candler Bldg., for residence, Glenn Arden Way, N. E.; hardwood and tile floors, comp. roof, steam heat.

N. C., Asheville—Dr. G. Farrar Parker, Flat Iron Bldg., probably start work in Spring on \$10,000 residence, Biltmore Forest; brick, wood joist floors, 2 stories and basement, 56x28 ft., steam heat, oak floors, slate roof; Henry Irven Gaines, Archt., Public Service Bldg. 9-17

Va., Richmond—Bradford H. Walker, 10th and Capitol Sts., erect brick, granite and limestone residence, Windsor Farms; 2 stories, struc. steel, tile partitions, steel sash, marble, tile work, orna. iron, slate roof, Carrier-Lyle heating; Henry G. Morse, Archt., Essex Falls, N. J.; bids in.

## Government and State

Ala., Tuskegee—Prospective estimators on barrack and dining hall bldgs., bids Nov. 17 by Veterans Administration, Arlington Bldg., Washington: Kerscher Elevator Co.; Haughton Elevator & Machine Co., both Toledo, O.; Murch Bros. Construction Co., Ry. Exch. Bldg., St. Louis, Mo.; Shepard Elevator Co.; Warner Elevator Co., both Cincinnati, O.; A. Kleckhefer Elevator Co., Milwaukee, Wis.; Colorado Engineering Co., Equitable Bldg., Baltimore, Md.; Virginia Engineering Co., Inc., First Natl. Bk. Bldg., Newport News, Va.; W. P. Thurston Co., Inc., 301 S. Fourth St., Richmond, Va.; Mason & Dulin, Inc., 3024 Third Ave.; Smallman-MacQueen Construction Co., Inc., 1109 Fifth Ave., both Birmingham, Ala.; J. S. McCauley Co., Inc.; Grahn Construction Co., Red Rock Bldg.; Weekley Elevator Co., Bona Allen Bldg., all Atlanta, Ga.; Adams Construction Co., Woodward Bldg., Washington Ave.; Samford Bros. Inc., 301 Washington Ave.; Electro Construction Co., Inc., 211 Lebron Ave., both Montgomery, Ala.; S. & W. Construction Co., Shrine Bldg., Memphis, Tenn.; Batson-Cook Co., Inc., West Point, Ga.; Murphey Pound, Box 422, Columbus, Ga.; Moffatt Machinery Manufacturing Co., Charlotte, N. C.; Huntington & Guerry, Inc., Box 406, Spartanburg, S. C. 10-22

Fla., Jacksonville—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, has low bid at \$19,700 from Otis Elevator Co., 810 18th St., N. W., Washington, for elevator plant, parcel post bldg.; H. J. Klutho, Archt., 2030 Main St. 10-22

Fla., St. Petersburg—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, opens bids Nov. 17 for remodeling and enlarging post office.

Ga., Fort Valley—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, opens bids Nov. 12 for \$85,000 post office; drawings from office Supvg. Archt.; Algernon Blair, First Natl. Bk. Bldg., Montgomery, Ala., estimating. 12-18-30

Ky., Pikeville—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, opens bids Nov. 23 for post office, etc.; \$93,000; drawings from office Supvg. Archt.

La., Barksdale Field, Shreveport—Constructing Quartermaster opens bids Nov. 20 for headquarters bldg.; \$72,000.

## BUILDING NEWS

## BUILDINGS PROPOSED

## Association and Fraternal

La., Monroe—Knights of Columbus open bids Nov. 20 at office J. W. Smith & Associates, Archts., Ouachita Natl. Bank Bldg., for \$16,000 clubhouse; brick, rein. conc., stone trim, 2 stories, 40x60 ft., rein. conc. foundation, steel and iron work, sheet metal, built-up comp. roof.

W. Va., Wheeling—Wheeling Lodge No. 28, B. P. O. E., Wade H. Kepner, Exalted Ruler, postponed erection of \$300,000 lodge bldg.; E. Bates Franzheim, 1425 Chapline St., Frederic Faris and Geo. B. Cunningham, Pythian Bldg., architects. 7-23

## Bank and Office

Mo., St. Louis—Illinois Terminal Railroad System, Louis E. Fischer, Pres., subsidiary of North American Light & Power Co., in few days starts caisson work for foundations of North American Bldg., 12th Blvd. and Washington Ave.; 10 stories with foundation for 20 stories, U shape, air-conditioned, 91,000 sq. ft. rent space; polished black granite for first 2 floors, orna. light brick above, 2 main entrances, one to passenger station occupying 2 levels below street, four 800-ft. per minute signal control elevators; Mauran, Russell & Crowell, Archts., Chemical Bldg.; Stone & Webster Engineering Co., Consil. Engrs., 1205 Olive St. 8-6

## Churches

Md., Baltimore—Monroe St. M. E. Church, Rev. C. A. Sadofsky, Pastor, erect addition to Sunday school.

N. C., Rowland—Methodist Episcopal Church, South, erect brick and rein. conc. bldg.; cast stone trim, 2 stories and basement, asbestos shingle roof, steam heat; W. D. Harper & Co., Archts., Florence Trust Co. Bldg., Florence, S. C.; bids in.

Tex., El Dorado—Rev. Carl F. Werdmann plans Lutheran church.

Tex., Humble—Methodist Church, Rev. T. C. Sharp, Pastor, probably rebuild church

and Sunday school noted burned at \$10,000 loss.

Tex., Nacogdoches—Baptist Church started work on \$20,000 Sunday school annex; brick, 3 stories, 46x70 ft., conc. foundation, 30 rooms, 3 auditoriums.

W. Va., Charleston—Church of the Nazarene erect bldg., Central Ave.

## City and County

La., Alexandria—City, V. V. Lamkin, Mayor, plans fire station.

Md., Eastport—Eastport Volunteer Fire Co. opens bids Nov. 10 for steel frame fire station; \$15,000; tile and brick walls, 2 stories, 40x70 ft., conc. foundation, flat slab roof, cast stone, hardwood floors, metal ceilings, steel sash and trim, ventilators; Frederick Carlson, Archt. Address L. E. Strange. See Want Section—Building Material and Equipment.

Mo., Webster Groves, St. Louis—City of Webster Groves, J. B. Chipman, Mayor, opens bids Nov. 6 (new date) for city hall, exclusive of heating, plumbing and wiring; separate bids for plumbing and for wiring; \$70,000; brick and stone, rein. conc., 2 stories, 105x40 ft., conc. and comp. floors, conc. foundation, marble, built-up comp. and slate roofing, hollow tile, vaults; furnishings, equipment, etc., \$20,000; Chas. L. Thurston and Trueblood & Graf, Assos. Engrs., 1521 Chemical Bldg.; Chas. Martin, Engr., Synd. Trust Bldg., all St. Louis. 10-15

Mo., St. Louis—Bd. of Public Service has low bid at \$99,246 from Kaplan-McGowan Co., 315 N. Seventh St., for Biddle Market; Albert Osburg, Archt.; L. R. Bowen, Ch. Engr., Dept. of Bldgs. and Bridges, both City Hall.

Tex., Houston—City Council, J. M. Nagle, City Engr., City Hall, receiving bids for fire station No. 3, Crockett and Colorado Sts.; \$12,000, 2 stories, brick veneer, conc., pine and terrazzo floors, rein. conc. foundation, asbestos shingle roof, hollow tile, ventilators. 9-10

La., Morgan City—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, opens bids Nov. 27 for \$75,000 post office; brick.

Md., Annapolis—State Bd. of Public Works, Mr. McCusker, Sec., in cooperation with Tercentenary Comsn., W. L. Marbury, Maryland Trust Bldg., Baltimore, member, probably select architect in few months for \$200,000 Memorial Hall of Records.

Miss., Biloxi—Veterans Administration, Room 764, Arlington Bldg., Washington, opens bids Dec. 8 for Veterans Administration Home bldgs. and utilities, including roads, walks, grading and drainage; work includes excavating, conc. piling, rein. conc., hollow cement blocks, hollow tile, brick work, cut stone, cast stone, slate stair treads, marble work, terrazzo, floor and wall tile, compressed asphalt tile and linoleum floors, iron work, flagpole, steel sash, steel stairs, steel shelving, cabinets and partitions, shingle tile, metal and built-up roofing, roof ventilators, metal lathing, plastering, sound deadening, carpentry, metal weatherstrips, insect screens, platform scales, painting, glazing, hardware, boiler plant equipment, ventilating, elec. elevators, sewage disposal works, and outside sewer, water, gas, steam and elec. distribution systems; separate bids for (a) gen. constr. of hospital bldg., etc., including alternates; (b) plumbing, heating, elec. work and outside distribution systems for all work included in Item 1; (c) elec. elevators; (d) steel water tank and tower; (e) refrigerating and ice making plant; (f) gen. constr. of nurses' quarters, garage and elec. work and outside service connections; alterations, including plumbing, heating and drawings from Constr. Service, Room 764. 9-24

Miss., Winona—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, selected site for \$75,000 post office.

Mo., Lebanon—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, has low bid at \$52,810 for buff stone and at \$52,810 for Carthage stone from Kellogg & Anderson, Sedalia, Mo., for post office, etc. 10-22

N. C., Greensboro—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, has low bids at \$613,717 for light gray vein-limestone from Algernon Blair, First Natl. Bk. Bldg., Montgomery, Ala.; low bid at \$569,000 from Geo. H. Rommel Co., 958 Logan St., Louisville, Ky., for buff limestone. 10-22

Okla., Sapulpa—Cooke & Maxey, Shawnee, Okla., and Landis & Young, S. Jordan Ave., Bloomington, Ind., estimating on \$150,000 post office, bids Nov. 20 by Treasury Dept., Jas. A. Wetmore Act. Supvg. Archt., Washington. 10-29

Tex., San Benito—Prospective estimators on \$125,000 post office, bids Nov. 9 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington; Landis & Young, S. Jordan Ave., Bloomington, Ind.; Quisile & Andrews, 2212 W. Seventh St., Fort Worth, Tex.; Samford Bros., Inc., 301 Washington Ave., Montgomery, Ala.; Kellogg & Anderson, Sedalia, Mo.; Theriault Contracting Co., 534 E. Johnson St., Philadelphia, Pa.; Phelps-Drake Co., Inc., Metropolitan Life Bldg., Minneapolis, Minn.; Wm. MacDonald Construction Co., Synd. Tr. Bldg., St. Louis, Mo.; Geo. E. Wieland, Travis Bldg., San Antonio, Tex.; John L. Soderberg, Kennedy Bldg., Omaha, Neb.; Meriwether & Sauer, Harlingen, Tex.; A. J. Rice Construction Co., 1913 N. Harwood St., Dallas, Tex.; Don J. Byrum, Inc., 40 Haddale Ave., Wheeling, W. Va.; McMillan Construction Co., Vinsant Bldg., San Benito. 10-12

Tex., Sabine Pass—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, purchased site for \$375,000 quarantine station. 2-20-30

Tex., Tyler—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, selected Shirley Simons, Tyler, as archt. for \$150,000 post office and Federal bldg.

Va., Langley Field, Hampton—Prospective estimators on 6 single and 4 double company officers' quarters, bids Nov. 16 by Constructing Quartermaster: Davis Bros., Inc., 15 N. Sixth St.; W. P. Thurston Co., Box 2089; W. F. Jackson Co., 207 Bldrs. Exch. Bldg.; Miller Manufacturing Co., Inc., Stockton and Sixth Sts., all Richmond, Va.; Virginia Engineering Co., Inc., First Natl. Bk. Bldg.; Harwood Construction Co., Law Bldg.; Noland Co., Inc., 322 28th St.; W. T. Eubank, 3101 Jefferson Ave.; Rosenbaum Hardware Co., 2610 Washington Ave., all Newport News, Va.; W. T. Gregory, Flat Iron Bldg.; Hall-Hodges Co., 807 Cit. Bk. Bldg.; Building Supplies Corp., 1900 Monticello Ave.; Globe Iron Construction Co., Princess Anne Rd. and Park Ave.; Cullen & Bell, 20 Commercial St.; Brooks Sheet Metal Works, 1028 W. 27th St., all Norfolk, Va.; Batson-Cook Co., Inc., West Point, Ga.; Townsend Lumber Co., Anderson, S. C.; Enterprise Co.,

Ocean View, Va.; R. F. Slaughter Lumber Co., Phoebus, Va.; Roanoke Iron Works, Inc., D. J. Phipps, both 212 Main St., Roanoke, Va.; A. S. Bacon & Sons, Schwarze Ave., Savannah, Ga.; Joe B. Martin, 211 Kinney Bldg., Charlotte, N. C.; Jewell Riddle Co., Inc., Sanford, N. C.; Crane Co., 1225 1 St. N. W.; United Construction Co., Munsey Bldg.; Truscon Steel Co., 17th and I Sts., N. W., all Washington; Chas. T. Taylor, 17 S. King St., S. J. Watson, Jr., both Hampton, Va.; Cut Stone Association of Indiana, Bloomington, Ind.; Ingalls Stone Co., Bedford, Ind.; M. H. Sobel Co., First Natl. Bk. Bldg.; Atkin & Stock, Inc., 14915 Grand River, both Detroit, Mich.; Decatur Iron & Steel Co., Decatur, Ala.; Pease Co., Mitchell Ave., Cincinnati, O.; Snow Lumber Co., 210 E. Commerce St., High Point, N. C.; John M. Kisner & Bro. Lumber Co.; Chas. E. Mumford, 6 Locust Ave., both Fairmont, W. Va.; Rogers & Leventhal, Inc., Box 173 Chattanooga, Tenn.; Green & Stowe, 532 McDowell St., Welch, W. Va.; R. Mankin & Co., Huntington, W. Va.; Brooklyn & Queens Screen Manufacturing Co., Hempstead, N. Y.; M. H. Sobel Co., Langley Field, Va.; Warner Service Co., 102 W. Clinch Ave., Knoxville, Tenn.; Carl Westberg & Co., 6234 S. Oakley Ave., Chicago, Ill.; McPhillips Manufacturing Co., Ft. of Lawrence St., Mobile, Ala.; G. C. Johnson Construction Co., First Natl. Bk. Bldg., Welch, W. Va.; Wilson Co., Charlottesville, Va.; Carleton Co., Broadway and 42nd St., New York; Dietrich Bros., Pleasant and Davis Sts.; Fidelity Engineering Corp., 6300 Belair Rd., both Baltimore, Md. 11-42

Va., Lynchburg—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, call for bids by Nov. 10 for \$800,000 Federal bldg., Church St. near Ninth St.; 4 stories. 10-1

Va., Norfolk—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, opens bids Nov. 10 to clear site for \$1,500,000 post office, court house, custom house, etc.; Benj. F. Mitchell, Rudolph, Cooke & Van Leeuwen, Inc., Asso. Archts., all Arcade Bldg., Norfolk. 9-24

### Hospitals, Sanitariums, Etc.

Ark., North Little Rock, Little Rock—Veterans Administration, Arlington Bldg., Washington, let contract at \$183,350 to Wm. Peterson, 1121 Donaghey Bldg., Little Rock, for clinical bldg., U. S. Veterans Hospital, rein. conc., hollow tile, brick work, cut stone, marble, floor and wall tile, rubber tile, compressed asphalt tile and linoleum floors, terrazzo, iron work, steel sash, steel stairs with slate treads, steel shelving, cabinets and partitions, slate, metal and built-up roofing, roof ventilators, metal lath, sound deadening, metal weatherstrips, insect screens, window shades, elec. elevator, outside sewer, water, gas, steam and elec. service connections. 10-15

D. C., Washington—Additional prospective estimators on bldgs., St. Elizabeths Hospital, bids Nov. 17 by Dept. of Interior:

Concord Construction Co., 5631 Sansom St., Philadelphia, Pa.; Westinghouse Electric Elevator Co., 30th & Walnut Sts., Philadelphia, Pa.; The Warner Elevator Mfg. Co., Cincinnati, O.; Capital Lift & Mfg. Co., 424 W. Town St., Columbus, O.; Fidelity Construction Co., 1218 Randolph St., N. E., Washington; A. Kieckhefer Elevator Co., Milwaukee, Wis.; Graham Construction Co., 1052 Washington Bldg., Washington; Maitlico Construction Co., 805 5th St., N. W., Washington; Adelphia Electric Co., c/o Doubleday Hill Electric Co., 715 12th St., N. W., Washington; United Construction Co., Munsey Bldg., Washington; Nelson Chase & Gilbert, Inc., 57 William St., New York; M. A. Long Co., 10 W. Chase St., Baltimore, Md.; M. H. Sobel Co., 1031 1st Nat. Bank Bldg., Detroit, Mich., and Langley Field, Va.; James McHugh Sons, Inc., 840 W. 70th St., Chicago, Ill.; Gillis & Geoghegan, 537 W. Broadway, New York; The Vilter Mfg. Co., Milwaukee, Wis.; Chas. Shutrump & Sons Co., 1900 Euclid Ave., Cleveland, O., and 601 Albee Bldg., Washington; H. E. Crook Co., Inc., 28 Light St., Baltimore; Robert E. Anderson, 808 Maryland Ave., N. E., Washington; W. F. Moodey Engineering Co., Little Rock, Ark.; Maryland Sales & Engr. Co., Laurel, Md.; Scott Craft Construction Co., Duluth, Minn.; Afgo Engineering Corp., 142 Fulton St., New York; Robert A. Moyer, 3409 Quebec St., N. W., Washington; Atlantic Elevator Co., Inc., Erie Ave & D. St., Philadelphia; P. C. Streett Engineering Co., 404 St. Paul St., Baltimore; The W. P. Thurston Co., Richmond, Va.; Standard Engineering Co., 2129 Eye St., N. W., Washington; John Grant & Son, 3866 Carnegie Ave., Cleveland; Chas. H. Shook, Inc., 3rd National Bldg., Dayton, O.; Chas. E. Mumford, 6 Locust St., Fairmont, W. Va.; Wark Company, 1608 Walnut St., Philadelphia; The Hunkin-Conkey Construction Co., Cleveland; Bruns-

wick-Kroeschell Co., New Brunswick, N. J.; Wittenmeier Mach. Co. of N. Y., 103 Park Ave., New York; Industrial Engr. Construction Co., 1909 Minnesota Ave., S. E., Washington; B-W Construction Co., 101 Park Ave., New York. 10-29

Ga., Augusta—Veterans Administration, Arlington Bldg., Washington, has low bid at \$8081 from J. B. Mobley, Broad St., Augusta, for utilities bldg., U. S. Veterans Hospital. 10-22

Md., Baltimore—John Hopkins Hospital, Broadway and Monument Sts.; 3-story, 75x75-ft. brick laundry; Herman F. Doeeman, Struc. Engr., Balto. Trust Bldg.; Office of Joseph Evans Sperry, Archt., Calvert Bldg. 9-17

Md., Glenn Dale—District Comms., Dist. Bldg., A. L. Harris, Municipal Archt., Lawrence Johnstone, Assistant, Major H. L. Robb, Asst. to Engr. Commr., all Washington, probably break ground in Dec. for tuberculosis sanatorium for children, Defense Highway near Glenn Dale; hospital bldg., central heating and power plant, nurses' home and physician's residence; main structure \$340,000, 4 stories, Georgian type, red brick, 350 ft. long, accommodate 130; well and water supply system, sewage disposal system; hope to receive bids on nurses' home, \$60,000, by Dec. 1; probably ready for bids on main bldg. by Feb. 1; others as conditions permit; Thos. B. Kidner, Consrt. Archt., 175 Fifth Ave., New York. 4-16

Miss., Jackson—State Hospital Removal, Improvement and Land Sale Comsn., Chas. A. Gordon, Sec., New State Capitol, soon call for bids for additional units, \$5,000,000 Mississippi Insane Hospital; dairy barns, mule barns, poultry farm unit, 5 physicians' cottages, 10 employees' dwellings; N. W. Overstreet, Archt., Standard Life Bldg., Jackson; Vinson B. Smith, Advisory Archt., Gulfport. 10-22

Okla., Tulsa—City, Earl Logan, City Auditor, soon take furnishings and equipment bids for hospital.

Tex., Galveston—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, opens bids Nov. 27 for officers' quarters Nos. 4 and 5 and recreation bldg. No. 6, U. S. Marine Hospital; drawings from office Supvg. Archt.

Tex., Houston—City of Houston and Harris County have completed plans for \$1,500,000 charity hospital, Buffalo Drive; call for bids upon approval of plans; accommodate 300; 9-story general hospital, 2-story outpatient clinic, nurses' home and combined power plant and laundry; rein. conc., brick, stone trim, dumb waiters, elec. refrigerators, elevators, terrazzo, rubber and mastic floors, incinerator, limestone, marble, metal doors, flat and hip roofing, steel sash and trim, vaults, ventilators, wire glass, brass and bronze work; Alfred C. Finn and Joseph Finger, Associated Archts., 6110 Bankers' Mfg. Bldg., Houston; Dr. Christopher Parrott, Medical Consultant, Rochester, N. Y. 8-13

Tex., Rusk—Prospective estimators on \$35,000 employees' dormitory, State Hospital, bids Nov. 16 by State Bd. of Control, Austin: General—Quisile & Andrews, 2212 W. Seventh St.; Wm. H. Southwell, Inc., 501 W. T. Waggoner Bldg.; Butcher & Sweeney, 806½ Taylor St.; Cain & Cain, 400 Holmes Bldg.; West & Womack, 312 Reynolds Bldg.; Thos. S. Byrne, Inc., 1003 Ft. Worth Natl. Bank Bldg.; James T. Taylor, 1207 Aviation Bldg., all Fort Worth; Bailey, Burns & Fitzgerald, Mercantile Bldg.; Lee R. Doughty, 320 E. Ninth St., both Dallas; Snodgrass & Snodgrass; Hjalmar M. Selby, 318 College Drive, both Abilene; Geo. E. Wieland, 106 E. 25th St., Austin; H. H. Shadie, Aspermont, Plumbing—J. C. Korieth, Sherman; S. P. Asburn, 1900 Fifth Ave., Fort Worth; Beach Plumbing & Heating Co., 300 S. Main St.; G. D. Harris & Co., 109 W. Jefferson St., Dallas. Wiring—Eugene Ashe Electric Co., 505 Jones St.; Grover Moore Electric Co., Moore Bldg., both Fort Worth; Republic Engineering Corp., Republic Natl. Bank Bldg., Dallas; Edward Tenagg, 220 W. Commerce St., San Antonio. 10-29

Va., Norfolk—City Council has low bid at \$29,490 from E. E. Weddle & Co., Board of Trade Bldg., for bldg. at municipal center for Henry A. Wise Memorial Hospital. 10-15

Va., Norfolk—City Council rejected bids for \$80,000 dormitory, Municipal Hospital; soon take new bids; Winkham C. Taylor, Archt., Cit. Bk. Bldg. 10-15

### Hotels and Apartments

Fla., Miami Beach—H. L. Liebig erect 4-unit apartment, 610 16th St.; rein. conc. block and stucco, 2 stories, tile and comp. roof, tile and hardwood floors.

Fla., Miami Beach—Bowdade Holding Corp., A. H. Fox, 2003 S. W. Tenth St., Miami, may erect \$12,500 to \$15,000 apart-

ment, Euclid Ave. and Tenth St.; rein. conc., conc. block and stucco, 4 units; B. Kingston Hall, Archt., 609 Collins Ave., Miami Beach.

Md., Baltimore—York Apartment Co., care Marion J. Nasco, 14 E. Lexington St., ready for bids in about 3 weeks for 6-story apartment, York Rd. section; brick, 45x110 ft.

Mo., St. Louis—Sam Hamburg, Jr., Arcade Bldg., erect 48-suite apartment near Kingshighway and Washington Sts.; \$150,000, 4 stories; 30-car garage.

### Miscellaneous

Okla., Oklahoma City—Oklahoma Coliseum Corp., J. H. Frederickson, Pres., 407 W. Main St., completing plans for \$125,000 coliseum; brick, stone, steel and rein. conc., 2 stories; Schumacher & Winkler, Archts., Hightower Bldg.; T. F. Collier Co., Struc. Engr., 2729 W. 19th St.

S. C., Columbia—State Fair, D. D. Witter, Pres., may erect restroom bldg. for women for 1932 fair.

Tex., Fort Worth—Meredith Cramer, care Meredith Cramer Enterprise, Inc.; \$450,000 theater-apartment, Eighth Ave. and Pennsylvania St.; apartments on 4 floors, roof garden. See Buildings Proposed-Theaters.

### Railways Stations, Sheds, Etc.

Tex., Fort Worth—Gulf, Colorado & Santa Fe Railway Co., F. G. Pettibone, Vice-Pres. Gen. Mgr., and Southern Pacific Lines, owners, Fort Worth Union Passenger Station Co., may start work about Dec. 1 on 4 passenger platforms, 2 subways and rearrangement of tracks for passenger station, Jones St. near 14th St.; C. A. Ashbold, Engr. in Charge.

9-17

### Schools

Ark., Beebe—Junior Agricultural College opens bids Nov. 12 at office Pres. of Bd. for brick bldg.; plans from Durward Kyle, Archt., Natl. Bldg., Pine Bluff.

La., Kentwood—Following contractors estimating on \$90,000 senior high school, bids Nov. 17 by Tangipahoa Parish School Bd., Amite: General—Anzalone Construction & Supply Co., Independence, La.; W. J. Quick, 424 Bilbo St., Lake Charles, La.; G. L. Whitaker & Son, Tylertown, Miss.; C. G. Kershaw Contracting Co., Crowley, La.; W. E. Rubush, Kentwood, La.; Dye & Mullings, Florence, Miss.; L. W. Eaton, 1601 N. Blvd.; C. H. King, Prescott Lane; A. C. Stewart, 810 E. Blvd.; W. M. Day, 2318 Spain St.; D. E. Chapman, Weick Bldg., all Baton Rouge, La.; Caldwell Bros., 816 Howard Ave.; T. A. Pittman, 2305 Almonaster Ave.; Wm. Wallace, Pere Marquette Bldg., all New Orleans, La.; Plumbing and Heating—American Plumbing & Heating Co., Inc., 829 Baronne St.; Gore & Daubert, Inc., 835 Baronne St., both New Orleans; Craft-Rushworth, Ltd., 1449 Fla. St.; Standard Plumbing, Heating & Supply Co., 227 Laurel St.; State Plumbing, Heating & Supply Co.; Claude Wilkinson, all Baton Rouge; Favrot & Vivaudou, Ltd., Archts., 401 Nola Bldg., New Orleans.

10-29

Md., Annapolis—Navy Dept., Bureau of Yards and Docks, Washington, opens bids Nov. 11 for alterations and additions to quarters, Naval Experiment Station; work includes removing some partitions, windows, doors, porches, stairs, fixtures, etc.; rearranging plumbing, heating and lighting systems; installing 2-story addition, porches, windows, doors, partitions, flooring, etc., including brick work, conc. constr., lathing and plastering, roofing and sheet metal work, painting, glazing, wood framing and finish and plumbing, heating and elec. equipment and fixtures. Following prospective estimators: Davis Construction Co., 9 W. Chase St.; J. Geo. Bensel Co., 3005 Shannon Drive, both Baltimore, Md.; Crane Co., 1225 I St., N. W., Washington; Hercules Construction Co., 21 E. 40th St., New York.

10-22

Tenn., Chattanooga—Hamilton County Bd. of Education selected R. H. Hunt Co., James Bldg., as archt. for \$200,000 vocational school; remodel garage.

10-29

Tex., Austin—University of Texas Bd. of Regents, Judge R. L. Batts, Chmn., selected Matthews & Kenan, 1616 Smith-Young Tower, San Antonio, as const. engrs. for engineering bldg., for architecture bldg., and for Students' Union group; Frane Chappell, 3218 Drexel Drive, Dallas, as const. engr. for home economics bldg.; R. L. Rolfe, Kirby Bldg., Dallas, as const. engr. for geology bldg. and for men's dormitory; R. O. Jameson, Southwestern Life Bldg., Dallas, as const. engr. for library bldg. and for physics bldg.; R. L. White, University of Texas, Archt. for students union group; Herbert M. Greene, LaRoche & Dahl, Construction Bldg., Dallas, archts. for other bldgs.; Paul P. Cret, 112 S. 16th St., Philadelphia, Pa., const. archt. for all.

9-17

Tex., San Antonio—City Bd. of Education, Mrs. J. E. King, Pres., opens bids Nov. 6 for physical education bldg., Edgar Allen Poe Junior School, 110 Cooper St.; brick and rein. conc., 1 story, 30x100 ft., lockers, showers; Giles & Beckman, Archts., Moore Bldg.; L. D. Royer, Mech. Engr., Smith-Young Tower; Phelps & DeWees, School Archts., Gunter Bldg.

7-16

Tex., San Antonio—City Bd. of Education, Mrs. J. E. King, Pres., opens bids Nov. 12 for addition to Robert E. Lee School No. 30, 710 Lamar St.; 6 rooms and cafeteria, rein. conc. frame, brick and stucco, 1 story, 166x65 ft., cast stone trim, wood and comp. floors, built-up roof over conc. slab; Geo. Willis, Archt., Bldrs. Exch. Bldg.; L. D. Royer, Mech. Engr., Smith-Young Tower; Phelps & DeWees, School Archts., Gunter Bldg.

8-13

Tex., San Antonio—City Bd. of Education, Mrs. J. E. King, Pres., rejected bids for addition to Milam School No. 4; complete new plans about Nov. 12; brick, struc. clay tile, 2 stories, 5 rooms and cafeteria, conc. floors, metal lath; L. Harrington Co., Archts. Engrs., Bldrs. Exch. Bldg.; L. D. Royer, Mech. Engr., Smith-Young Tower; Phelps & DeWees, School Archts., Gunter Bldg., all San Antonio.

10-29

W. Va., Huntington—Marshall College plans Student Union bldg.; 1 story, 154x38 ft.

### Stores

Fla., Orlando—S. H. Kress & Co., 114 Fifth Ave., New York, may erect \$200,000 to \$250,000 store.

## BUILDING CONTRACTS AWARDED

### Bank and Office

La., Donaldsonville—E. L. Markel, Archt., Bldr., 3838 Louisiana Ave. Pkwy., New Orleans, supervise constr. of \$30,000 office bldg.; brick and tile, 2 stories; sub-bids Nov. 2.

Tenn., Nashville—Warner Bros. Pictures, Inc., 321 W. 44th St., New York, let gen. contract to Summer Construction Co., Sumner Bldg., Nashville, and G. A. Zimmerman Corp., 18 E. 41st St., New York, for office bldg. and garage unit of \$2,000,000 theater and office bldg., Sixth Ave. and Church St.; \$6000,000; excavation and steel contracts previously noted let; office bldg. 12 stories, white limestone, black granite trim, signal control elevators; garage 2 stories, 200 cars; Mar & Holman, Archts., Stahlman Bldg., Nashville; H. R. Maier, chief of constr. for Warner Bros.

5-28

16 masonry dwellings, 1301-31 Trinidad Ave., N. E.; 2 stories; total \$80,000.

D. C., Washington—M. M. Silenthal, 1652 Newton St., N. E., let contract to John Wigand, 1336 Newton, for \$10,000 residence, 3428 Oakwood Terrace; 2 stories, 33x48 ft., slate roof, hot water heat.

D. C., Washington—T. D. Carroll, 1221 Quincy St., N. E., erect brick residence, 3837 26th St., N. E.; 2 stories, 30x24 ft., slate roof, hot water heat; L. W. Giles, Archt., 1200 U St.; A. G. Stevens, Contr., care owner.

D. C., Washington—Thos J. Farley, 3209 13th St., N. E., erect frame residence, 1316 Irving St., N. E.; 2 stories, 24x28 ft., asphalt shingle roof, hot water heat; Folsom Kemp & Nix, Contrs., 2314 Rhode Island Ave., N. E.

D. C., Washington—J. Murray, 4529 South Dakota Ave., N. E., erect brick and hollow tile residence, 1245 Girard St., N. E.; 1 story, 28x32 ft., asphalt shingle roof, hot water heat; Paul F. Fox, Contr., 838 Delafield Place.

D. C., Washington—E. Baldi, 1329 N St., N. W., erect 14 brick dwellings, Fourth St. near Jefferson St.; 2 stories, tin roofs, hot water heat; total \$120,000; owner builds.

D. C., Washington—Pauline E. Burns, 923 Kennedy St., erect brick and frame residence, 3608 Military Rd.; 2 stories, 34x26 ft., slate roof, hot water heat; Griffin Bros., Contrs., 1343 H St.

Fla., Jacksonville—R. B. Ramage, Professional Bldg., has permit for \$12,000 residence, 1470 Avondale Ave.; brick and frame, 2 stories; D. J. Kelly, Contr.

Ga., Atlanta—Mrs. V. T. Massey, 569 Gresham St., erect brick veneer dwelling, 2021 Halifax Drive, N. E.; 1 story, 6 rooms, hardwood floors, comp. roof, hot air heat; owner builds.

Ga., Atlanta—DeLoach & Marbut, 512 Flat Shoals Ave., S. E. erect brick veneer residence, 1117 Glenwood Ave.; 1 story, hard wood floors, comp. roof, hot air heat; Bona Allen Bldg., Atlanta.

Ga., Columbus—L. G. Bowers, Front Ave., let contract to A. S. Woolfolk, 9 W. 12th St., for \$15,000 to \$20,000 residence, Buena Vista Rd.; brick, 2 stories, slate or comp. roof; Jas. Biggers, Archt.

Ga., Milledgeville—G. E. McWhorter erect hollow tile residence; 1 story and basement, conc. foundation, comp. roof, 2 baths, hot air heat; Claude W. Shelverton, Archt., Grand Bldg., Macon; owner probably build.

Ga., West Point—J. H. Horsley, care West Point Manufacturing Co., let contract to J. W. Melton, West Point, for residence; brick veneer, 1 story and basement, conc. foundation, hardwood floors, tile baths, comp. roof, steam heat; Robert & Co., Inc., Archts., Bona Allen Bldg., Atlanta.

La., New Orleans—Jack Liuzza erect \$10,000 duplex, Delgado Drive near Carrollton Ave.; frame and stucco, 2 stories, 29x70 ft.,

### Churches

Tex., Galveston—Beth Jacob Congregation let contract to Frank & Kennedy, 3078 J St., for \$35,000 brick synagogue, 24th and K Sts.; R. R. Rapp, Archt., Guaranty Bldg.

6-25

Tex., San Antonio—Corinth Baptist Church, 1602 Dakota St., erect \$12,000 brick veneer and rein. conc. bldg.; 1 story and balcony, 47x88 ft.; Eugene Tanner, Archt., 814 Indiana St.; W. C. White, Contr., 630 N. New Braunfels Ave.

### City and County

Ga., Atlanta—Fulton County Bd. of Comrns., Wm. Turner, remodel Tower (jail), Butler St.; cell work, partitions, flooring, etc.; owner builds.

1-22

Mo., Eldon—City Council erecting \$20,000 city hall; Saylor & Payson, Archts., Interstate Bldg., Kansas City.

1-22

N. C., Raleigh—Virginia Bridge & Iron Co., Roanoke, Va., reported, has contract for 375 tons fabricated struc. steel for memorial auditorium; Atwood & Weeks, Inc., Archts.-Engrs., Odd Fellows Bldg.; Wiley & Wilson, Inc., Mech. Engrs., Peoples Natl. Bk. Bldg., Lynchburg, Va.; C. V. York Construction Co., Contr., Odd Fellows Bldg., Raleigh.

10-29

### Dwellings

D. C., Washington—Oscar C. Stone, Silver Spring, Md., erect brick and frame residence, 6345 Western Ave.; 2 stories, slate roof, hot water heat; R. N. Rust, Contr., N. Braddock, Archt.

10-8

D. C., Washington—Muhleman & Kayhoe, 505 E. Franklin St., Richmond, Va., erect \$100,000 dwelling, 2962 Northampton St.; 2 stories, slate roof, hot water heat; owners build.

D. C., Washington—Columbia Construction Co., Ninth and Dahlia Sts., has permit for archt. for all.

brick foundation, sheet metal outbuilding, slate roof, sheet metal work, tile baths; Martin Shepard, Archt., Balter Bldg.; Sapputo & Gornalni, Contrs., 823 Perdido St.

Md., Baltimore—Harry F. Page, Bldr., 327 E. 30th St., plans \$20,000 dwelling, Homeland; may start work in Fall; brick, 2½ stories, about 40x32 ft.; Wrenn, Lewis, Westenhaver & Jencks, Archts., Title Bldg.

Md., Baltimore—Clifton K. Wells, 3538 Old York Rd., erect \$22,000 dwelling, Pinehurst; brick, 2 stories; also plans number dwellings, Middleton Court; Palmer & Lambdin, Archts., 513 N. Charles St.; owner builds.

Md., Baltimore—Diamond Const. Co., 516 W. Lexington St., erect 6 brick dwellings, 1-11 Jeffrey St.; plans by G. Ward; 2 stories, 14x42 ft.; furnace heat; owner builds. 10-29

Md., Baltimore—H. W. Momberger, Jr., 34 W. Chase St., excavating for 5 dwellings, Anneslie; brick, 2 stories; total \$30,000; owner builds.

Md., Baltimore—Wm. Mueller, 6202 Brooks Ave., erect 4 frame and stucco dwellings; 2 stories, 24x28 ft.; owner builds.

Miss., Natchez—R. Lee Parker, Jr., started work on residence to replace burned structure; R. E. Bost, Contr.; Foster Funeral Home erect brick addition; R. E. Bost, Contr.

Mo., St. Louis—A. W. Dehlendorf, 7401 Maryland St., started work on Colonial residence, Fordyce Lane, Ladue Village; brick and clapboard; Maritz & Young, Inc., Archts., Chemical Bldg.

Tex., Fort Worth—Ned Hoffman, 2529 Greene St., laying foundation for \$13,000 residence, Winton Terrace, East; brick, 2 stories, oak floors, tile roof, metal lath; Earl T. Glasgow, Archt., 201 W. T. Waggoner Bldg.; Carb Building Co., Contr., Wheat Bldg.

### Government and State

Ark., Forrest City—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, let contract at \$53,600 to W. B. Smith, El Dorado, Ark., for post office. 10-29

Ala., Greenville—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., let contract at \$53,000 to D. T. Underwood, 518 Lincoln Life Bldg., Birmingham, for post office; 3 stories, 84x54 ft., conc. foundation, limestone, marble, metal doors, plaster, rolling partitions, built-up and slate roof, steel sash and trim, hollow tile, vaults, brass and bronze work. 10-29

Ark., Little Rock—Additional sub-contracts let on \$1,435,000 Federal Bldg.; Millwork, waterproofing and dampproofing, Williams Roofing Co., 221 W. Markham St.; millwork, Arkla Sash & Door Co., E. 17th St.; plumbing and heating, Shaw Gas & Plumbing Co., 1401 W. Third St.; brick, Acme Brick Co., 115 Center St., all Little Rock; terra cotta, Atlanta Terra Cotta Co., East Point, Ga.; orn. iron, Price-Evans Foundry Co., Anderson Ave., Chattanooga, Tenn.; rolling doors, Kinner Manufacturing Co., Hibernia Bk. Bldg., New Orleans, La.; steel windows, David Lupton's Sons Construction Co., 2263 E. Allegheny Ave., Philadelphia, Pa.; cement, Marquette Cement Co., Cape Girardeau, Mo.; painting, Harry Krueger, Conway, Ark.; cork tile and cork carpet, David E. Kennedy, Inc., 16 E. 42nd St., New York; granite, John Clark Co., Rockville, Minn.; R. P. Farnsworth & Co., Inc., Gen. Contrs., Maritime Bldg., New Orleans, La. 10-29

Ga., Fort Benning—Walker Electrical Co., 111 12th St., Columbus, Ga., has contract at \$10,000 for ventilating systems, Fort Benning.

Md., Curtis Bay, Baltimore—U. S. Coast Guard Headquarters, Washington, let contract to Minter Homes Co., Dundalk, Md., for 1-story steel frame bldg., about 61x181 ft., for U. S. Coast Guard Depot; conc. foundation and floor, brick work to under side of window sills, metal siding and steel sash. 10-15

Mo., Mountain Grove—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, let contract at \$53,550 to Busboom Bros., Fairbury, Neb., for post office, etc.; brick, natural stone, terra cotta, conc., marble, granite, 2½ stories, terrazzo, hardwood and linoleum floors, conc. foundation, built-up slate and tile hip roof, metal doors, steel sash and trim, hollow and gypsum tile, vault doors, wire glass, brass and bronze work. 10-29

Tex., Georgetown—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, start work Nov. 10 on \$80,000 post office; brick, stone trim, 2 stories, 54x80 ft., best grade maple, 13/16x2½, conc. foundation, slate and built-up roof; furnishings, equipment, etc., \$10,000; Landis & Young, Contrs., 603 S. Jordan Ave., Bloomington, Ind. See Want Section—Building Material and Equipment; Machinery and Supplies. 10-29

Tex., Memphis—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, let contract at \$51,900 to Landis & Young, Bloomington, Ind., for post office, etc. 10-29

Tex., Wichita Falls—Mosher Steel & Machinery Co., 5200 Maple St., reported, has contract for 110 tons struc. steel shapes for \$750,000 post office, etc.; 324 tons conc. bars to Austin Bros., 1815 Coombs St., both Dallas, Tex.; Voelcker & Dixon, Inc., Archts., Perkins-Snider Bldg., Wichita Falls; J. W. Underhill Construction Co., Contr., Constr. Bldg., Dallas. 10-15

W. Va., Clendenin—Big Sandy Dist. Bd. of Education, Kanawha County, H. O. Phillips, Sec., let contract at \$38,000 to Lambert & Griffith, Ironton, O., for brick, stone trim, rein. conc. and wood school; 2 stories, hardwood, tile, comp. and mastic floors, conc. foundation, built-up flat roof, hollow tile, vaults, ventilators, wire glass; Frampton & Bowers, Archts., 414 11th St., Huntington. 8-27

W. Va., New Martinsville—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, let contract at \$48,493 to P. W. Johnson, Portsmouth, O., for post office. 10-29

### Hospitals, Sanitariums, Etc.

Ala., Birmingham—Jefferson County Bd. of Comms., let contract at \$44,375 to D. T. Underwood, 518 Lincoln Life Bldg., for additions to Hillman Hospital; Turner & Van Arman, Archts., Martin Bldg. 10-29

Tex., Terrell—State Bd. of Control, Claude D. Teer, Chmn., Austin, let contract at \$51,734, including wiring, to Crisman & Nesbit, 1915 Alabama St., Dallas, for ward bldg., Terrell State Hospital; plumbing and heating, \$7,400, H. W. Harris, Greenville; brick, struc. steel, stone and rein. conc., 2 stories, 130 x 65 ft., metal lath, marble stalls and wainscots, wire guards, conc. and terrazzo floors, built-up roof; Lindsey & Kilmer, Archts., Greenville. 10-12

Ark., Benton—Arkansas Construction Coms., let contract at \$18,750 to Wm. Peterman, Little Rock, for boiler house, \$3,250,000 State Hospital for Nervous Diseases; smoke stack, Rust Engineering Co., 20 W. Wacker Drive, Chicago, Ill., at \$3800; contracts to be let Nov. 9 for boilers and fuel apparatus and underground steam and hot water distribution system; Mann, Wanger & King, Archts., 1316 Donaghey Bldg., Little Rock. 9-24

Ark., Benton—Otis Elevator Co., 810 18th St., N. W., Washington, has contract at \$9888 for elevators in \$300,000 clinical bldg., U. S. Veterans Hospital; tile floors, W. H. Dwiggs & Co., 816 Main St., Little Rock, Ark., at \$8800. 10-29

Miss., Jackson—State Hospital Removal, Improvement and Land Sale Coms., let contract at \$3490 to C. C. Scott, Jackson, for new potato curing and storage house, \$5,000,000 Mississippi Insane Hospital; plumbing for patients' cottage Type B, No. 4, Negro Group No. 2, to Weaver & Conn, Gulfport, at \$2498; linen chutes, Fred Thrasher, 1804 Robinson St., Jackson, at \$860; N. W. Overstreet, Archt., Standard Life Bldg., Jackson; Vinson B. Smith, Advisory Archt., Gulfport. 10-22

### Hotels and Apartments

D. C., Washington—Paul F. Lesh, Atty., 1422 F St., N. W., will complete 8-story apartment, 1417 N St., N. W.; Frank Tomlinson, Archt.-Contr.

D. C., Washington—Young & Oppenheimer, 814 F St., N. W., erecting 4 brick apartments, 1717-23 West Virginia Ave.; 2 stories, 32x38 ft., oak and tile floors, conc. foundations.

D. C., Washington—S. S. Pennfrey, rear 2108 I St., erect 3-story apartment, 2108 I; hollow tile, 21x62 ft., slag roof, steam heat; Geo. T. Santmyers, Archt., 925 15th St.; work by sub-contract.

D. C., Washington—Jacob Rubin, 3704 Marmont St., erect 5-story stone and brick apartment, Connecticut and Nebraska Aves.; fireproof; Harry A. Brandt, Archt., 5211 13th St.; work by sub-contract.

D. C., Washington—Webster Construction Co., care Minkoff & Smith, 1327 Allison St., erect brick, hollow tile and rein. conc. apartment, Longfellow St. and Colorado Ave.; 5 stories, 90x151 ft., limestone trim; Geo. T. Santmyers, Archt., 925 15th St.; work by sub-contract.

Md., Baltimore—Thrift Construction Co., 501 Morris Bldg., erect 3-suite apartment, 3402-04 Rosedale St.; 2 stories, 37x34 ft., two 18x18-ft. garages; owner builds.

Md., Baltimore—John W. Neidhardt, 2505 St. Paul St., has contract to erect 3-suite apartment, Arlington; frame, 2 stories, 30x50 ft.

Mo., St. Louis—A. B. Realty & Investment Co., erect \$20,000 tenement, 3446-48 Lawn Ave.; 2 stories, comp. roof, steam heat; Mayer Building & Realty Co., Contr., both 3548 S. Grand St.

N. C., Lexington—Dr. C. R. Sharpe and Dr. F. G. Johnston, let contract to L. S. Costner, Cherryville, for \$40,000 addition to Parkview Apartments, Third Ave., West, and Park St.; heating and plumbing, H. C. Davis, Lexington; brick and tile, rein. conc. floors, 3 stories and fireproof basement, garage in basement, steam and vapor heat, fire escapes, refrigeration system, elec. stoves, circulating hot water, Insulite, roof garden; 15 suites; Percy Bloxom, Archt., Salisbury. 10-8

### Miscellaneous

Fla., Hialeah—Chas. B. Colby & Son, Day St., Coconut Grove, Miami, have contract at \$14,804 for mounting stalls and entrance gates to clubhouse and grandstand at racing track for Miami Jockey Club; masonry wall bids rejected; Smith & Riddle, Inc., Supvg. Engrs., 210 Royal Palm Way; L. W. Geisler, Archt., 19 Via Parigi, both Palm Beach. 10-22

Ga., Savannah—Edwin Gould Foundation for Children erect English cottage type bldg., 54th St. and Atlantic Ave.; masonry, 143.6x88 ft.; accommodate 40 children; 4 dormitories, dining room, living room, sewing rooms, lavatories, infirmary, 2 open air play decks, kitchen, matron's quarters, etc.; vapor-vacuum heating, oil burner; Cletus W. Bergen, Archt., Liberty Bk. & Tr. Bldg.; R. W. Boyd, Contr.

### Schools

Ala., Tuskegee—Tuskegee Normal & Industrial Institute, care Taylor & Persley, School Archts., let contract to T. C. Windham & Sons, 1620 Fourth St., North, Birmingham, Ala., for Thomas A. Edison Science Bldg.; \$200,000, rein. conc., brick and hollow tile, 3 stories and basement, 81x164 ft., comp. roof, struc. steel, Indiana limestone or cast stone trim, frame, conc., conc. joist, metal doors, Barrett 20-yr. flat roof, sprinklers, tile, conc. and asbestos tile floors, steel sash and trim, comp. roof; furnishings, equipment, etc., \$75,000; C. E. Posey, Engr., 2159 11th Court, South, Birmingham; Fosdick & Hilner, Consol. Mech. Engrs., Union Trust Bldg., Cincinnati, O. 10-15

La., Baton Rouge—Architectural Cast Stone Co., 8122 Colapissa St., has cast stone contract for Fine Arts Bldg., Louisiana State University; cabinet work, Riecke Cabinet Works, 4201 Tulane Ave.; steel windows, Truscon Steel Co., Canal Bk. Bldg.; Carey asbestos bonded built-up roof, Edw. Chassanier, Inc., 625 Baronne St., all New Orleans, La.; painting, F. W. Womack, Baton Rouge; stage ventilator, J. T. Mann, 319 Dryades St., New Orleans; weatherstrips and caulking, Chamberlain Metal Weatherstrip Co., 1301 Young St., Dallas, Tex.; asphaltic tile and base, Thomas Moulding Floor Co., 165 W. Wacker Drive, Chicago, Ill. Following sub-contracts let on Field House: Bloxoned flooring, Carter Bloxoned Flooring Co., Kansas City, Mo.; hardware, Gibbons & Gordon, Inc., 332 Canal St.; steel windows, Truscon Steel Co., Canal Bank Bldg., struc. Ingalls Iron Works Co., Masonic Temple; glazing, Pittsburgh Plate Glass Co., 314 Girod St.; hollow metal, kalamein doors and steel frames, American Sheet Metal Works, 331 N. Alexander St.; roofing and sheet metal work, Holzer Sheet Metal Works, Inc., 321 Burdine St., all New Orleans; millwork, Baton Rouge Sash & Door Works, Inc.; painting, F. W. Womack, Lovers Lane, both Baton Rouge; steel buck frame, Kalman Steel Co., Chandler Bldg., Atlanta, Ga.; Caldwell Bros., Contrs., 816 Howard Ave.; orn. and misc. iron, Birmingham Ornamental Iron Co., Birmingham, Ala.; screens, Nachary Builders Supply Co., Inc., 318 Cardonelet St.; waterproofing, D. S. Melvin, Whitney Bldg., both New Orleans; bronze work, Usona Manufacturing Co., 3510 Chouteau St., St. Louis, Mo.; caulking, Chamberlain Metal Weatherstrip Co., 1301 Young St., Dallas. 10-12

La., Laplace—E. L. Markel, Archt.-Bldr., 3388 Louisiana Ave., Pkwy., New Orleans, ready for sub-bids in about 1 week for \$25,000, 2-story brick school.

Md., Glen Burnie—Anne Arundel County Public School Bldg. Coms., Geo. Fox, Sec-Treas., let contract to Saml. B. Dove, 3 Acton Place, Annapolis, for \$200,000 brick high school; 3 stories; Buckler & Fenham, Archts., 325 N. Charles St.; Wm. H. Emory, Jr., Asso. Archt., Balto. Trust Bldg., both Baltimore. 10-29

Okl., Chandler—Johnson Construction Co., Weleetka, has contract to repair and erect addition to gymnasium; brick, 1 story, 70x100 ft.; \$10,000; Joe I. Davis, Archt., First Natl. Bldg., Oklahoma City. 8-6

Md., Rockville—Montgomery County School Comsn. erect \$12,000 school, Glenmont; brick, 1 story and basement 24 x 90 ft., hardwood floors, hollow tile, built-up slab roof, steel and iron work, steam heat. Howard W. Cutler, Archt., 1800 E St., N. W., Washington; A. C. Warthen Sons Co., Contrs., Kensington, Md.

Tenn., Knoxville—Converse Bridge & Steel Co., 2408 Vance Ave., Chattanooga, Tenn., reported, has contract for 420 tons structural steel for alumni memorial, physical education bldg. and gymnasium, University of Tennessee; Barber & McMurray, Archts., General Bldg.; A. H. Whisman, Contr., 422 Front St. 10-21

Tenn., Knoxville—Knox County School Bd., W. W. Morris, Supt., let contract to H. E. Rogers, 977 Lee Ave., for schools at Solway, \$4567, High Bluff, \$4567, and Moore, \$4321.

Tex., San Antonio—A. Martin Wright Electric Co., 1001 Navarro St., San Antonio, has wiring contract at \$17,771 for junior high school; Giesecke & Harris, Archts., Norwood Bldg., Austin; R. R. Rapp, Asso. Archt., Guaranty Bldg., Galveston; L. D. Royer, Mech. Engr., Smith-Young Tower, San Antonio. 10-22

### Stores

Ark., Walnut Ridge—Burrow Bros., gro-

cers, started work on store, Elm and W. Front Sts.

D. C., Washington—Biango Ambrogi, 238 Rhode Island Ave., erect 2-story and mezzanine store, 2825 14th St.; 18x84 ft., slab roof, gas heat; Edw. A. Poynton, Archt.; Arthur W. Poynton, Contr., both 1427 1 St.

Fla., Jacksonville—Nasrallah Bros., 135 W. State St., erect \$10,000 solid brick store, 135 W. State; cast stone trim, 1 story, 100x24 ft., conc. floors, built-up roof; Floyd Construction Co., Contr.

Ga., Atlanta—Atlanta Loan & Trust Co., 148 Auburn Ave., N. E., erect brick veneer store and dwelling, 254 Auburn Ave., N. E.; 2 stories, hardwood floors, conc. roof; Aiken & Faulkner, Contrs., Auburn Ave.

Ga., Atlanta—Massell Holding Co., 75 Walton St., N. W., repair bldg., 735 Stewart Ave., S. W., damaged by fire; brick, comp. roof; owner builds.

Ga., Atlanta—J. Bulow Campbell, 2958 Andrews Drive, N. W., alter bldg., 193 Peachtree St.; Capitol Construction Co., Contr., 410 Standard Bldg.

La., Laplace—E. L. Markel, Archt.-Bldr., 3838 Louisiana Ave. Pkwy., New Orleans, ready for sub-bids in about 1 week for \$10,000, 2-story brick store.

Tex., Fort Worth—W. F. Collins, Fourth and Throckmorton Sts., let contract to West & Womack, 312 Reynolds Bldg., for \$30,000

fireproof store, Third and Throckmorton; brick and rein. conc., 3 stories and basement, 50x100 ft., built-up roof, plate glass front; wiring, Shatts Electric Co., Throckmorton St.; painting and elevators not let; W. G. Clarkson & Co., Archts., First Natl. Bank Bldg. 10-1

### Theatres

Tenn., Nashville—Warner Bros. Pictures, Inc., 321 W. 44th St., New York, let gen. contract to Sumner Construction Co., Sumner Bldg., Nashville, and G. A. Zimmerman Corp., 18 E. 41st St., New York, for office bldg. and garage unit of \$2,000,000 theater and office bldg., Sixth Ave. and Church St.; \$800,000; excavation and steel contracts previously noted let; theater contract later; Marr & Holman, Archts., Stahlman Bldg.; H. R. Maier, chief of constr. for Warner Bros. See Bank and Office.

### Warehouses

D. C., Washington—Rosslyn Steel & Cement Co., Rosslyn, Va., reported, has contract for 2000 tons conc. bars for \$1,025,000 Federal warehouse for Office of Public Buildings and Public Parks; Lockwood Greene Engineers, Inc., Consult. Engrs., 100 E. 42nd St., New York; B-W Construction Co., Contr., 720 N. Wabash Ave., Chicago, Ill. 10-1

## WANT SECTION

### THE CLASSIFICATIONS IN THIS SECTION ARE:

#### Machinery and Supplies

Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

*Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.*

#### Building Materials and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

#### Bids Asked

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

#### Machinery and Supplies

**Boiler.**—Louisiana Southern Lumber Co., 927 Canal St., New Orleans, La.—Wants prices and data on 60-h. p., H. R. T. type, or locomotive type boiler; New Orleans delivery.

**Cigarette Manufacturing Machinery.**—H. Colvin Linthicum, Box 834, Raleigh, N. C.—Wants prices and data on used machinery for manufacturing cigarettes.

**Concrete Pipe Manufacturing Machinery and Forms.**—Turner-Rand Gravel Co., Schertz, Tex.—Wants prices and data from manufacturers on machinery and forms for making concrete drain and sewer pipe.

**Derrick.**—Landis & Young (Builders), 603 S. Jordan Ave., Bloomington, Ind.—Want prices and data on medium size 3-leg derrick.

**Dragline Boom and Bucket.**—Crystal Springs Sand & Gravel Co., Inc., P. O. Box 26, Crystal Springs, Miss.—Wants prices and data on dragline boom and bucket with drag drum, for 50B steam Bucyrus.

**Engine (Diesel).**—Machinery Record, Hackley Morrison (Mchly. Dealer), Mutual Bldg., Richmond, Va.—Wants prices and data on Fairbanks-Morse, semi-Diesel or full Diesel oil engine, direct connected to 75 or 60-kw., a. c. generator.

**Engine.**—See Generator Set.

**Ferry Boat.**—Fred Kelly, Sec., Hopewell Chamber of Commerce, Hopewell, Va.—Wants prices and data on used ferry boat, 6 to 8 car capacity, crude oil burning engine type preferred; consider granting franchise to owner of such equipment.

**Generator Set.**—Taylor-Parker Co., Inc., Water St. and Commercial Pl., Norfolk, Va.—Wants prices and data on generator set; 350 kw., a. c. generator, 3-phase, 60-cycle, 550-volt, direct connected to Uniflow or 4-valve engine.

**Laundry and Dry Cleaning Machinery.**—Geo. B. Cooke, 1008 Camelia Ave., Baton Rouge, La.—Wants prices and data on laundry and dry cleaning machinery.

**Radiators.**—T. L. Smith, 927 Canal St., New Orleans, La.—Wants prices and data on 3 to 4 gas-steam (natural gas burners) radiators, 5 to 7 sections; will consider slightly used equipment.

**Timber Sizer.**—G. W. Simmons, 219 Court Ave., Memphis, Tenn.—Wants prices and data on timber sizer, 12x16 in., or similar in size.

Machinery Record, Hackley Morrison (Mchly. Dealer), Mutual Bldg., Richmond, Va.—Wants prices and data on:

(1) **Boiler**—50 h. p., Economic type, 125 lb. pressure

(2) **Turbo-generator**—200 kw., 2200 volt, bleeder type, 200 lb. steam pressure.

#### Miscellaneous

**Asphaltic Mastic.**—A. G. Wedberg Co., 228 N. La Salle St., Chicago, Ill., putting new wood block flooring on market—Wants prices and data from manufacturers on cold asphalt mastic.

**Cylinders (Creosoting).**—Machinery Record, Hackley Morrison (Mchly. Dealer), Mutual Bldg., Richmond, Va.—Wants prices and data on 2 creosoting cylinders, 6-in. diam., 130 ft. long, 150 lb. pressure.

**Key Rings, etc.**—W. S. Hogan, Chapel Hill, N. C.—Wants prices and data from manufacturers of key rings and snap buckles.

**Scale.**—Machinery Record, Hackley Morrison (Mchly. Dealer), Mutual Bldg., Richmond, Va.—Wants prices and data on 11-ton platform or truck scale, 24,000 lb. capacity.

#### Building Material and Equipment

**Carlson & Carlson.** Maurice Meade, both Eastport, Md., Bean Bros. and Saml. B. Dove, both Annapolis, Md., want prices on following for \$15,000 fire station, Eastport:

#### Cast Stone

#### Flooring—hardwood

#### Metal Doors

#### Roofing—flat

#### Steel Sash and Trim

J. V. & R. T. Burkes, Inc., 1112 Amer. Bk. Bldg., New Orleans, La., estimating on barracks and dining hall bldgs. Veterans Administration Hospital, Tuskegee, Ala., bids Nov. 17, and desires quotations on all sub-contracts and materials by Nov. 15.

Landis & Young, Contrs., 603 S. Jordan Ave., Bloomington, Ind., want prices on following for \$80,000 post office, Georgetown, Tex.:

#### Dumb Waiters

#### Electric Water Coolers

**Flooring**—hardwood, linoleum with cork, terrazzo, tile

#### Glass

#### Marble

#### Metal Doors

#### Roofing—built-up, slate, tile

#### Steel Sash and Trim

#### Tile—gypsum, hollow

#### Bronze Work

Busboom Bros. (low bidders), Fairbury, Neb., want prices on following for \$55,000 post office, Mountain Grove, Mo.:

**Flooring**—hardwood, terrazzo, tile

**Limestone**

**Electric Wiring**

**Heating and Plumbing**

**Steel and Iron**

**Ornamental Iron**

**Millwork**

**Marble**

**Roofing (hip)**—slate, tile, built-up

**Tile**—gypsum, hollow

**Terra Cotta Trim**

**Vault Doors**

**Wire Glass**

**Brass and Bronze Work**

#### Bids Asked

**Aerial Survey.**—U. S. Engr. Office, P. O. Box 72, Louisville, Ky.—Bids Nov. 10 for aerial topographic survey of Saline River, mouth to Harrisburg, Ill.

**Aluminum and Aluminum Alloy Treating Equipment.**—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Nov. 17 for equipment for anodic treatment of aluminum and aluminum alloy.

**Backfill.**—Fort Monroe, Va. See Construction News—Miscellaneous Construction.

**Bridge.**—Virginia. See Construction News—Roads, Streets and Paving.

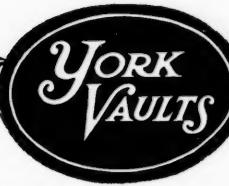
**Cement.**—U. S. Engr. Office, 1006 McCall Bldg., Memphis, Tenn.—Bids Nov. 11 for approx. 60,000 bbl. American Portland cement in cloth bags.

**Clearing Site.**—Treasury Dept., Office Supvg. Archt., Washington, D. C.—Bids Nov. 10 for clearing site for new U. S. post office, court house, custom house, etc., Norfolk, Va.

**Compressor Unit, etc.**—Commanding Officer, San Antonio Arsenal, Tex.—Bids Nov. 19 for all-metal motor driven compressor unit, 3-gal. pressure tank paint container and spray gun.

**Core-making Machine.**—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Nov. 10 for core-making machine.

**Dikes.**—Missouri. See Construction News



## HENRY L. DOHERTY BUILDING INSTALLS YORK VAULTS

THIS magnificent building in New York City is the new home of the Cities Service Company. From it are directed the activities of this great institution which has over 125 subsidiary companies, more than 25,000 employes and operates in 36 states as well as in Canada and Mexico. Its securities are owned by more than three-quarters of a million people.

The selection of York Vaults by this great company to protect its vast resources is the most recent of many significant tributes to York excellence and York preeminence.

### YORK SAFE & LOCK CO. York, Pennsylvania

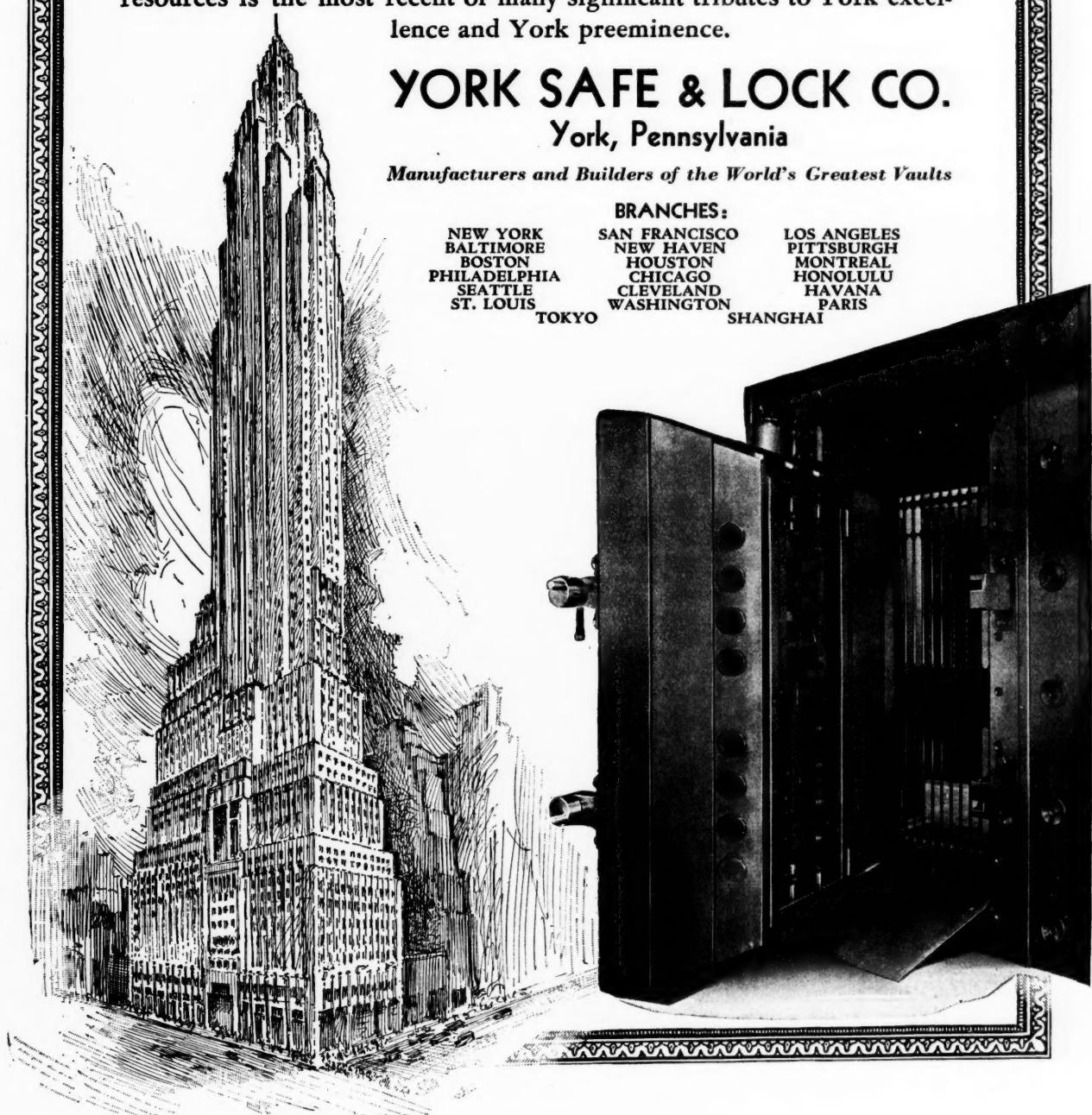
*Manufacturers and Builders of the World's Greatest Vaults*

**BRANCHES:**

NEW YORK  
BALTIMORE  
BOSTON  
PHILADELPHIA  
SEATTLE  
ST. LOUIS  
TOKYO

SAN FRANCISCO  
NEW HAVEN  
HOUSTON  
CHICAGO  
CLEVELAND  
WASHINGTON

LOS ANGELES  
PITTSBURGH  
MONTREAL  
HONOLULU  
HAVANA  
PARIS  
SHANGHAI



## CONSTRUCTION DEPARTMENT

## Manufacturers Record

**Engines (Diesel).**—Supt. of Lighthouses, New Orleans, La.—Bids Nov. 10 for 2 marine Diesel engines for lighthouse tender Aster.

**Fire Hose.**—Bd. of Comms., New Orleans Fire Dept., Hon. Alfred Meister, Chmn., Apparatus and Supply Committee, New Orleans, La.—Bids Nov. 9 for 5000 ft. 2½-in. fire dept. hose, rubber lined, 50-ft. sections, coupled with Rocker lug couplings.

**Fuel Oil Tank, etc.**—Geo. H. Schumacher, Capt. Q. M. Corps, Constructing Q. M., Langley Field, Va.—Bids Nov. 10 for construction two 50,000 gal. conc. fuel oil tanks and installation of boiler plants and outside distribution system for hangar area.

**Gas Ranges.**—Quartermaster, Marine Corps, Washington, D. C.—Bids Nov. 12 for 225 gas ranges.

**Horseshoes.**—See Paints, etc.

**Levee.**—Missouri. See Construction News—Miscellaneous Construction.

**Lighting Fixtures.**—Treasury Dept., Office of Supvg. Archt., Washington, D. C.—Bids Nov. 23 for interior lighting fixtures, U. S. custom house, court house and post office.

**Light Fixtures.**—U. S. Engr. Office, Huntington, W. Va.—Bids Nov. 10 for light fixtures, U. S. Lock 8, Kanawha River.

**Lighting Fixtures.**—Supvg. Archt., Treasury Dept., Washington, D. C.—Bids Nov. 23 for interior lighting fixtures, U. S. court house, customhouse and post office.

**Lumber.**—Office of Ch. of Engrs., Munitions Bldg., Washington, D. C.—Bids Nov. 20 for 8500 ft. yellow pine lumber and 7600 ft. lumber for joists, rafters and planks.

**Mechanical Refrigerating Units.**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Nov. 12 for mechanical refrigerating units, delivery and installation Quantico, Va.

**Meter Frames and Covers.**—City of Baltimore, Md., Leon Small, Water Engr.—Bids Nov. 12 for meter frames and covers, Bureau of Water Supply.

**Monument.**—Constructing Quartermaster, Fort Bragg, N. C.—Bids Nov. 17 for addition to Copwells-Ezell monument.

**Painting, Plaster, etc.**—Supvg. Archt., Treasury Dept., Washington, D. C.—Bids Nov. 13 for painting plaster, etc., U. S. post office, Dallas, Tex.

**Paints, etc.**—Quartermaster Supply Officer, Fort Sam Houston, San Antonio, Tex.—Bids Nov. 10 for 100 gal. heat-resisting paint, 1250 cakes stove polish and 6000 lb. horse-shoes.

**Printing and Stationery Supplies.**—Bd. of Awards, Office of City Register, City Hall, Baltimore, Md.—Bids Nov. 18 for miscellaneous printing and stationery supplies for various departments of city; J. Herbert Gaston, City Pur. Agt.

**Radio Transmitting Equipment.**—Purchase Sec., Bureau of Standards, Washington, D. C.—Bids Nov. 20 for radio transmitting equipment.

**Roads.**—State of Florida, 3 roads. See Construction News—Roads, Streets and Pav-ing.

**Roads.**—State of Maryland, 6 roads. See Construction News—Roads, Streets and Pav-ing.

**Roads.**—State of Kentucky, 3 roads. See Construction News—Roads, Streets and Pav-ing.

**Roads.**—State of Virginia, 3 roads. See Construction News—Roads, Streets and Pav-ing.

**Sampling Devices.**—Div. of Purchase, Sales and Traffic, Dept. of Agriculture, Washington, D. C.—Bids Nov. 10 for 3 grain sampling and mixing devices.

**Sewer Construction.**—Bd. of Public Service, St. Louis, Mo.—Bids Nov. 10 for constructing Rock Creek public outlet sewer.

**Sewer Construction.**—Dir. of Public Works, Richmond, Va.—Bids Nov. 10 for terra cotta and rein. conc. combined sewer alley between Monument and Park Aves.

**Stone.**—U. S. Engr. Office, 1006 McCall Bldg., Memphis, Tenn.—Bids Nov. 10 for approx. 20,000 tons stone, loaded on government barges, Helena, Ark.

**Tender and Machinery.**—Comms. of Light-houses, Washington, D. C.—Bids Nov. 24 for constructing tender Myrtle and machinery.

**Tanks (Oil).**—U. S. Engr. Office, Huntington, W. Va.—Bids Nov. 16 for oil tanks, for operating and care of canals and other works of navigation, Ohio River.

**Weatherstripping.**—Quartermaster, Army War College, Washington, D. C.—Bids Nov. 16 for metal weatherstripping.

**Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.**—Bids Nov. 10 for:

**Lathes (Engine).**—motor driven

**Press (Hydraulic).**

**Woodworking Machine.**—universal or combination, complete with attachments, motor driven

**Slip Roll Forming Machine.**—heavy duty, motor driven.

**Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.**—Bids Nov. 17 for:

**Bolt Threading Machine.**—motor driven

**Lathe (Engine).**—selective geared head, motor driven.

**Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.**—Bids until dates indicated for following:

**Lathes.**—3 motor driven engines, 1 turret and 1 draw-in chuck, for Charleston, Nov. 10

**Cypress.**—30,000 ft., for Hampton Roads, Nov. 10

**White Oak.**—31,439 ft., for Portsmouth, Nov. 10

**Hydraulic Press.**—electric driven, for Hampton Roads, Nov. 10

**Nails.**—steel wire, for eastern and western yards, Nov. 17

**Propeller Recording Machine.**—floor type, hand operated, for Hampton Roads, Nov. 17

**Spark Plugs.**—6700, for eastern and western yards, Nov. 17

**Friction and Insulation Tape.**—rubber, for eastern and western yards, Nov. 17

**Moulding Machine.**—for Portsmouth, Nov. 10

**Electric Fans.**—for eastern yards, Nov. 10

**Core-making Machine.**—air operated, for Portsmouth, Nov. 10

**Arm Chairs.**—150, for Portsmouth, Nov. 10

**Balsa.**—20,000 ft., for Norfolk, Nov. 10

**Insulating Material.**—1020 sq. ft., for Portsmouth, Nov. 17

**Goggle Switches.**—6000, for Portsmouth, Nov. 17

**Generator Units.**—Nov. 17 instead of Nov. 3

**Mattresses.**—2268 inner spring type, hospital, eastern and western yards, Nov. 17

**Dishwashing Machine.**—Portsmouth, Nov. 17

**Gen. Pur. Officer, Panama Canal, Washington, D. C.**—Bids Nov. 23 for following, Sch. 2699:

**Long-distance Liquid level indicating and recording system, lighting arrestors, electric hotplates, wire rope, pipe and fittings, drill casing, burial caskets, water coolers, empty paint pails and cans, extension and step-ladders, chain bolts, casters, hinges, rim latches, chain links, foundry pig iron, fire brick, phosphor tin, etc.**

## Trade Literature

**Asphalt Plants.**—The New York Central Iron Works Co., Inc., Hagerstown, Md., engineers, founders and steel fabricators, have issued a new catalog devoted to asphalt plant and other equipment which the company produces. In addition to engineering service, the company offers a complete line of machine work, foundry products, patterns, structural steel fabrication, steel plate-work, pressed steel products, welding and electrical work, etc.

**Pumping Machinery.**—Catalogs, bulletins and other literature released during the past month by the Worthington Pump and Machinery Corporation, Harrison, N. J., included the following: Specification sheets, W-312-S2A, devoted to centrifugal pumps, type L; W-312-S3A, on centrifugal pumps, type LA; W-312-S9, on centrifugal pumps, type LL; W-318-S3A, on centrifugal pumps, type UB; D-112-B3, on Horizontal "Duoplex" steam pumps for oil manufacturing processes; D-412-S-5, on horizontal duplex power pumps; D-423-E10, on vertical power pumps; L-400-B1A, on Worthington Multi-V-Drive; D-450-B4A, on Deepwell pumps; WD-310-B3, on centrifugal pumps, groups C, D, L, R and U; DW-110-B1, on direct-acting, simplex and duplex steam pumps; D-412-B1, on horizontal and vertical power pumps, and L-621-B3, on air compressors.

**X-Ray Method of Testing.**—The Combustion Engineering Corporation, New York, has issued a pamphlet discussing the X-ray method of testing, which is prescribed in the A. S. M. E. Code. It describes an installation of X-ray equipment representative of the latest development in this field.

**Modern Water Storage.**—This is the title of an attractive catalog issued by the Pittsburgh-Des Moines Steel Company of Pittsburgh, Pa., and Des Moines, Iowa, with Southern branch offices in Atlanta, Ga., and Dallas, Tex. The publication is devoted to steel water storage tanks and reservoirs for municipal waterworks, private water systems, industrial plants, institutions and railways.

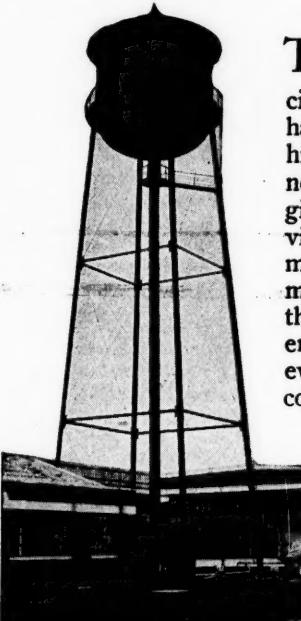
**Sludge Digestion Equipment.**—Catalog 32, "The Downes Cover and Sludge Digestion Equipment," has been issued by the Pacific Flush-Tank Co., New York. It describes the Downes Floating Cover for sludge digestion control and illustrates some of its applications, giving details of the advantages of this non-mechanical-part device for providing a reliable and effective method.

**Gas Statistics.**—The American Gas Association, New York, has issued Statistical Bulletin No. 9, covering annual statistics of the manufactured gas industry in the United States. The bulletin is the ninth of a series to be issued at intervals for the use of gas company executives, and was prepared by the Statistical Department of the American Gas Association, Paul Ryan, statistician, with cooperation and advice of the Advisory Committee on A. G. A. Statistics.

**Business Administration.**—The "Handbook of Business Administration," sponsored by and published for the American Management Association, New York, has been issued from the press of the McGraw-Hill Book Company, Inc., New York. The volume contains 1753 pages, with W. J. Donald, managing director of the association, as editor in chief; Leona Powell, managing editor, and Kenneth B. Anderson, Edith King Donald and Mary Rodgers Lindsay, members of the staff of the association, associate editors. The book is designed as an encyclopedia of the best current managerial practice in all departments of business. The price is \$7.00.

**The Roeblings.**—During the century since John A. Roebling came to this country and began his career as engineer, bridge builder and industrialist, the Roeblings—father, sons and grandsons—in unbroken succession have made outstanding achievements of a public nature, culminating in the new George Washington bridge spanning the Hudson and connecting New Jersey with New York City. Under the title "The Roeblings," Hamilton Schuyler has written a book designed to give the public an intimate account of the lives and personalities of the men who, by their "progressive achievements in bridge engineering and industry have made the world familiar with the Roebling name." The volume, liberally illustrated, is divided into three parts, the first devoted to John August Roebling, the second to Washington Augustus Roebling and the third to Ferdinand William, Charles Augustus and the third generation. Ferdinand W. Roebling, Jr., is the present head of the John A. Roebling's Sons Co., with headquarters at Trenton, N. J. The book is from Princeton University Press and is priced at \$5.00.

## • COLE •



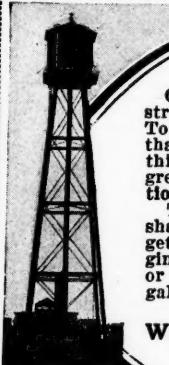
TANKS and towers designed to meet any special requirement. They have been developed to a high state of effectiveness and are designed to give uninterrupted service. They embody the most revised requirements of insurance authorities and have been erected in practically every section of the country.

We also specialize in Fuel Oil Storage Tanks, Oil and Water Storage Tanks, Acid Tanks, Vats, Chemical Tanks, Storage Bins, Stacks, and other forms of Steel Plate Construction.

♦ ♦ ♦

R. D. COLE MANUFACTURING CO.  
Established 1854

NEWNAN, GA.

New York Office  
5 Beekman St.

## A Super Tower

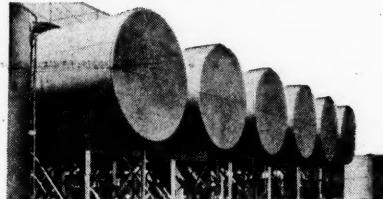
Generosity typifies the design and construction of Caldwell Structural Towers. To provide the strength and sturdiness that have marked the unusual success of this type of tower for heavy loads and great heights we have spared no precaution in material or workmanship.

This tower is built of heavy structural shapes thoroughly laced and riveted together by the most modern scientific engineering methods. It is built for steel or wood tanks in capacities from 15,000 gallons upward.

Send for Catalog.

W. E. Caldwell Co., Incorporated  
1900 Brook Street,  
LOUISVILLE, KY.

*Caldwell*  
TANKS  
AND  
TOWERS

SOUTHLAND  
PRODUCTS

CHATTANOOGA BOILER & TANK CO.  
Chattanooga, Tenn.

STAND  
PIPES  
SMOKE  
STACKS  
TOWERS  
AND  
TANKS  
STEEL  
RIVETED  
PIPE

PITTSBURGH  
DES MOINES

Modern Filtration Plant completed in July, 1931, for the City of Findlay, Ohio. The Consulting Engineers were H. P. Jones and Company, Toledo, Ohio.

## Two "Pittsburgh-Des Moines" Tanks Elevate the Water at Findlay's Filtration Plant

The smaller tank at the left holds 40,000 gallons and stands 48 feet to the top; the larger tank holds 500,000 gallons and stands 150 feet to the top.

These two "Pittsburgh-Des Moines" units assure the water mains of Findlay an ample supply at improved pressures—even during periods of peak demand. They also permit a simplified pumping schedule, and guarantee steady, adequate service during interruptions in pumping for repairs or replacement work. The increased pressure guarantees plenty of water to outlying districts and to the newly built-up sections of the city.

## QUALITY TANKS



Write for  
NEW CATALOG  
—Today!

"Modern Water Storage" our new catalog, has just come from the press. It contains 28 pages of reliable information, interesting photographs, authentic engineering data, and "Pittsburgh-Des Moines" specifications on various types of elevated tanks, pen-tanks, pipe lines, standpipes, steel reservoirs, treating plants, and complete water systems.

Interested municipal and industrial executives may obtain a copy by addressing our nearest office.

Pittsburgh - Des Moines  
Steel Company

3420 Neville Island, Pittsburgh, Pa.  
626 Glenn Building, Atlanta, Ga.

Des Moines  
Chicago

Seattle  
San Francisco

New York  
Dallas

**Heat Treatment of Steels.**—The Roessler & Hasslacher Chemical Co., Inc., New York, has issued the sixth edition of a booklet, "Heat Treatment of Steels With Cyanides and Salts." Information presented on case-hardening and heat treating of steels is of a general nature, but for specific uses and applications the necessary information may be obtained from the company's Metallurgical and Research Division.

**Skip Hoists.**—To increase its services to users of coal and ash handling equipment, the Fairfield Engineering Company, Marion, Ohio, manufactures a complete line of skip hoists and accompanying equipment, the hoists being available in capacities of 4 to 300 tons per hour, with bucket sizes from 10 to 150 cubic feet, and with bucket speeds ranging from 50 to 300 feet per minute. They are illustrated and described in Bulletin No. 60-1, which presents views of actual installations as well as installation charts.

**Oak Floors.**—The Oak Flooring Manufacturers' Association of the United States, Memphis, Tenn., is distributing its latest (39th) edition of "Laying, Finishing and Care of Oak Floors," having completed the printing of 300,000 of these booklets this year, or a grand total to date of 3,900,000. Practical advice is given regarding each detail of handling this type of floor.

**Termites.**—The Ayer & Lord Tie Co., Chicago, manufacturers of railroad cross ties, lumber, poles, bridge timbers, car stocks, piling and posts, mine timbers, etc., are distributing a booklet "Termites—A Growing Menace to Untreated Timber," discussing the termite, the damage it does, estimated at nearly \$45,000,000 annually, and how to prevent its ravages by use of pressure treatment of construction timber with pure creosote oil.

**Making Farms Pay.**—Telling a story of personal experience in managing 1000 tenant farms with profits to their owners, Cornelius J. Claassen has published a 126-page volume under the caption "Making Farms Pay." The publication is from the press of the Macmillan Company, New York, and carries a foreword by Wheeler McMillen. The price is \$2.

**Better Heat.**—The American Gas Association, New York, is distributing the latest edition of "Better Heat," a monthly publication issued by the Industrial Division of the Consolidated Gas Company of New York, and affiliated gas companies, illustrating and describing "new, interesting and unusual applications of gas to industry." Leading articles deal with the application of gas in the fermented milk products plant of Fermented Milks, Inc., and an ice cream plant.

icals Corporation at South Charleston, W. Va., for the production of the resin, the demand for the product by other industries is growing so rapidly that additional equipment is being installed.

#### Birmingham Company Awarded Prize

Roy D. Hickman, sales manager of the Alabama Engraving Company, Birmingham, has won the first prize of \$100, offered by the convention of American Photo-Engravers Association for the best 15-minute talk on a plan to increase business. The plan was evolved by the Alabama company and successfully operated last summer. "Advertising," said Mr. Hickman, "is solely responsible for the success of our plan. We have simply operated on the theory that people do not buy unless they are thoroughly acquainted with your products' reputation for quality and your ability to render efficient service."

#### Cutting and Welding Tips

Tips, Inc., 515 Cathedral street, Baltimore, Md., have incorporated and plan to distribute standardized cutting and welding tips, apparatus and accessories and merchandise of a similar nature. Officers include Otto W. Dieffenbach, president; George M. Englart, treasurer; Emory H. Niles, secretary, and L. D. Gans, assistant secretary. The company has contracted with the Alexander Milburn Company, Baltimore, for a large quantity of tips and apparatus, interchangeable with certain makes of torches, which it will distribute. Similar negotiations are under way with other manufacturers.

#### Westinghouse Advertising Manager

Ralph Leavenworth has been appointed general advertising manager of the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., according to J. S. Tritte, vice president and general manager. Mr. Leavenworth will have charge of all advertising and publicity of the company, including the advertising division of the merchandising department now centered in Mansfield, Ohio. Mr. Leavenworth graduated from Hamilton College in 1914 and his business career has been one in which sales and advertising administrative work have been closely paralleled. He will maintain offices in the East Pittsburgh headquarters of the company.

#### Building Inspectors Elect

Norfolk, Va.—At the third annual conference of the Virginia Building Inspectors Association the following officers were re-elected: George C. Hough, Lynchburg, president; H. P. Brack, Richmond, first vice-president; L. B. Dutrow, Front Royal, second vice-president; J. A. McCarthy, Newport News, sergeant at arms; John L. Wallerstein, Richmond, executive secretary; William F. Cocke, Manassas, D. R. Magann, Roanoke, and E. S. Dabney, Staunton, committeemen. The next conference will be held in Charlottesville during the week of the annual convention of the League of Virginia Municipalities.

## INDUSTRIAL NEWS

#### Moves New York Office

The Mundet Cork Corporation, an international enterprise, announces removal of its New York offices from 461 Eighth avenue to new and larger quarters at 450 Seventh avenue, on the 29th floor of the Nelson Tower, one of the larger buildings recently erected in New York. With the declaration that manufacturers of high quality products have suffered less during the present depression than manufacturers of ordinary or inferior products, the company points to its need of larger quarters as significant. To insure quality products the corporation attends to all details of its business, from the removal of cork from the trees to the manufacture of cork board, and finally the installation.

#### Textile Mill Offered

To satisfy outstanding first mortgage bonds, the property of the Williamson Mills Company, Charleston, S. C., will be sold at public auction at the county courthouse, Charleston, on November 24, the sale to include all lands, buildings, equipment, etc. Details regarding the sale and specifications as to machinery and equipment, etc., will be supplied by the South Carolina Security Company, Charleston.

#### Homestead Valve Representatives

Chatard & Norris, engineers, 218 Water street, Baltimore, have been appointed by the Homestead Valve Manufacturing Company, Inc., Coraopolis, Pa., as exclusive representatives of the company for the eastern part of Maryland and the District of Columbia.

#### Textiles-Incorporated Representative

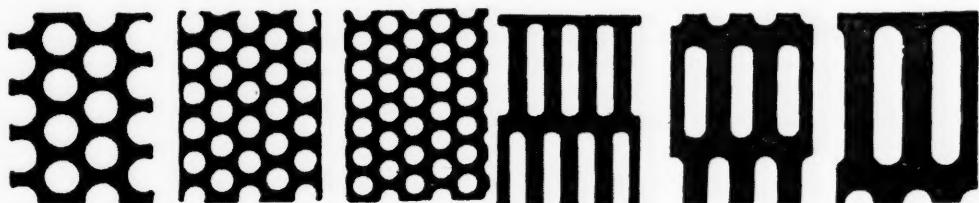
Charles L. Hall, Jr., of the Southern Yarn Company, Chattanooga, Tenn., has been appointed by Textiles-Incorporated Sales Company, Gastonia, N. C., as sales representative in Kentucky, Tennessee, Alabama, Georgia and Mississippi.

#### Has Many Potential Uses

Research Laboratories of the Union Carbide and Carbon Corporation, New York, have developed a type of resin declared to be entirely new and with a wide variety of potential uses. Known as Vinylite Resin, this new product is said to be free of any characteristic odor and has the ability to remold scrap, thus reducing loss through defective castings to negligible proportions. An important development in its use is the production of phonograph records, the unusual features of the resin giving to the records toughness, flexibility and thinness. The company, through its subsidiary, Carbide and Carbon Chemicals Corporation, has contracted to supply the R. C. A.-Victor Company large quantities of Vinylite Resin for use in molding new Vitrolac records. The absence of contraction or shrinkage is declared to result in unusually accurate reproduction of sound or music, including even overtones of the high notes on a violin, with practically no surface noises. The new record is said to be unusually durable, while the surface contains twice as many sound producing grooves as the old type. Another important use of Vinylite is the production of laminated products, such as satinwood, mahogany and other types of wood. While a commercial unit is operating steadily at the plant of the Carbide and Carbon Chemi-

## PERFORATED METAL SCREENS OF EVERY SORT—FOR EVERY PURPOSE

All sizes  
and  
shapes  
of Holes



Everything  
in  
Perforated  
Metal

The Harrington & King Perforating Company

5631 Fillmore St., Chicago, Ill., U. S. A.

New York Office: 114 Liberty Street



### MILLER FLUSH-TANK SIPHONS

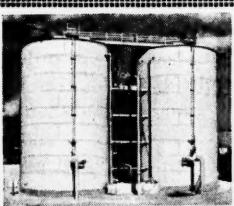
SIMPLE, RELIABLE, AUTOMATIC

Also Sewage-Disposal Apparatus, Automatic Sewage Ejectors, Convertible Diaphragm-Plunger Pumps, Sewer Jointing Compounds.

### PACIFIC FLUSH-TANK CO.

Write nearest office for catalog interested in.  
4241 Ravenwood Avenue  
CHICAGO

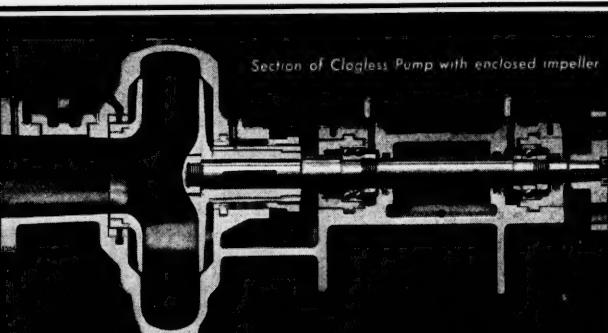
136 Liberty Street  
NEW YORK



### STEEL STORAGE TANKS SMOKESTACKS, STEEL BINS, STEEL PIPE, KILNS

Ask our nearest office for quotations

CHICAGO BRIDGE & IRON WORKS  
Birmingham ..... 1530 Fifteenth St. N.  
Dallas ..... 1208 Burt Bldg.  
Also Chicago, New York, Cleveland, Tulsa,  
Houston, Detroit, Philadelphia, Boston, San  
Francisco, Seattle, Los Angeles, Havana



## DE LAVAL CLOGLESS PUMPS

are characterized by:

- 1—Heavy, substantial construction;
- 2—Parts subject to wear readily renewable;
- 3—Pressure water seals at all running joints;
- 4—Interior quickly accessible;
- 5—Large, open and direct passages; of correct hydraulic design;
- 6—Stiff shaft with short overhang and high grade ball bearings spaced well apart.

Ask for Catalog B-1

DE LAVAL STEAM TURBINE CO., TRENTON, N.J.

### PERFORATED SCREEN PLATES AND SHEETS

for

ORES	Cotton-Seed Oil Mills	CEMENT
COAL	Cotton Gins	SAND
STONE	Phosphate Mines	CLAY
GRAVEL	Fertilizer Plants	ETC.
	Cyanide Works	
	Chemical Works	

Write for catalogue

CHARLES MUNDT & SONS  
490 Johnston Avenue, Jersey City, N. J.

### PERFORATED METALS HEADQUARTERS

Cotton Seed Oil Works a Specialty  
Send for Samples

ERDLE PERFORATING CO. Rochester, N. Y.

### Perforated Metals SCREENS OF ALL KINDS

Chicago Perforating Co.  
2445 West 24th Place  
Tel. Canal 1459 CHICAGO, ILL.



### MANHATTAN PERFORATED METAL CO., INC.

43 17-37th Street, Long Island City, N. Y.

No. 3

PERFORATORS  
of All Kinds of Metals for All Industries  
Write for Copper, Brass, Tin, Zinc or  
Aluminum Catalog



### Perforated Metal Screens for every purpose



MITCO Products—Interlocked Steel Grating; Shur-Site Stair Treads; Armorgrids.  
HENDRICK MANUFACTURING CO.  
44 Dundaff St., Carbondale, Pa.  
Offices in Principal Cities

### Synthetic Rubber Is Announced

The development by E. I. du Pont de Nemours & Co. of a new synthetic rubber was announced on Monday night at a meeting of the Rubber division of the American Chemical Society, at Akron, Ohio. The primary raw material for the new synthetic rubber is acetylene, which requires for its production only coal and limestone. The only other raw materials are salt and water. All the materials are available in unlimited quantities.

Papers by F. B. Downing, W. H. Carothers and Ira Williams said that the new synthetic product is made by the controlled polymerization of chloroprene and chloroprene is made by the catalytic polymerization of acetylene to monovinylacetylene, which is then treated with hydrogen chloride to produce chloroprene. This chemical result has led to the selection of "Duprene" as the trade name for the new rubber.

The new rubber, according to the announcement, has many commercially valuable qualities which will supplement the present uses of natural rubber. While it cannot yet be substituted for natural rubber in its wider ranges of everyday use, it is felt that further effort may greatly enlarge its field of usefulness.

Among the valuable properties attributed to the new product is the fact that it is much more resistant than natural rubber to the swelling action of gasoline, kerosene and other solvents that are notoriously harmful to rubber. It is also more resistant to oxygen, ozone and many chemicals that attack rubber. It can be vulcanized by the application of heat alone, whereas it is necessary to add sulfur in order to vulcanize natural rubber. An artificial latex which can be made from chloroprene is a milk-like liquid consisting of particles of fully vulcanized synthetic rubber suspended in water. Upon drying, a sheet of fully vulcanized rubber is obtained. The Duprene latex differs radically from natural latex because of its increased penetrating power so that it becomes possible to impregnate many porous materials that cannot be impregnated with natural rubber latex.

An X-ray diagram of the new rubber is similar to that of natural rubber, showing that it has the same type of molecular structure.

### New Coastwise Ship Service

Norfolk, Va.—The Munson Steamship Line, New York, plans to inaugurate a new coastwise service from Baltimore to Norfolk, New Orleans, Corpus Christi, Tex.; Jacksonville and Miami, Fla., ac-

cording to an announcement here. The service will be inaugurated with the sailing of the steamer Munaires from Baltimore November 20 and from Norfolk November 21. Dichmann, Wright & Pugh, Inc., are Norfolk agents for the Munson Line.

### Southern Fertilizer Convention

Problems of agriculture and industry in the South are to be discussed in a Southern convention of fertilizer men, at Atlanta, November 9 to 11. Charles F. Wilson of the Farm Board will outline its policies and plans which it has under consideration for relief of Southern agriculture. W. D. Anderson, president, Bibb Manufacturing Company, Macon, Ga., will discuss the relations of industry and agriculture in the South, with special reference to the present cotton situation. "Adjusting Supply to Demand" is the title of an address to be given by Secretary Charles J. Brand, and President Bayless W. Haynes, Jacksonville, in his presidential address will review business conditions as they affect the fertilizer industry of the South. Sales methods and credits, with special reference to the purchasing power of Southern farmers, also will be discussed.

### New Railroad Equipment

Roanoke, Va.—Plans have been made by the Norfolk and Western Railway Company to build ten new 22,000-gallon locomotive tenders and to repair five hundred 57½-ton hopper coal cars at its Roanoke shops, at an expenditure of approximately \$225,000. The new tenders will cost about \$125,000 and will furnish employment for a considerable number of men. Work will be started upon the completion of similar equipment now being built or rebuilt in the local shops. Each tender will weigh about 375,000 pounds when loaded with coal and water and will be used in main line service behind heavy Mallet Y locomotives. Work of repairing the 500 coal cars will also mean the employment of a large number of men and this order will be started about March 1, upon the completion of rebuilding 450 cars which has been under way for several months. The Norfolk and Western has carried on an extensive building and rebuilding program for several years in its Roanoke shops, placing orders during 1930 and 1931 for 20 Mallet locomotives, 1000 all-steel box cars, thirty 18,000-gallon tenders and the rebuilding of 950 all-steel 57½-ton hopper coal cars. All box cars, 17 locomotives, 22 tenders and 569 coal cars have been completed.

### To Inaugurate Barge Service on Intracoastal Canal

Upon completion within the next few months of equipment now under construction, the newly organized \$2,000,000 Louisiana-Texas Waterways Corp., New Orleans, will institute towing and barge service along that part of the Intracoastal Canal which runs between New Orleans and Houston and West Houston. Expansion to Corpus Christi and the Rio Grande will be made as soon as possible.

Contract for the first \$200,000 unit of equipment embracing two tow boats and 10 barges has been awarded to the Canulette Ship Building Co., Inc., Slidell, La. All of these vessels will be of steel construction and will have a draft of four feet to permit operations through parts of the canal that have not yet been deepened to nine feet. The tow boats will be Diesel-engine driven, after designs by Eads Johnson, New York naval architect.

This freight service will be the first of its kind in this section. Studies of the freight possibilities of the area to be served made this year by the Engineering Service Corp., Houston, found the tonnage available considerably greater than indicated by surveys made when the canal was authorized by the United States Government in 1924. Length of the main canal from the Harvey locks at New Orleans to Corpus Christi, is 566 miles and to Point Isabel at the Rio Grande, about 700 miles. A nine-foot depth and a 100-foot width will prevail.

A large part of the productive territory of Texas and Louisiana will be served by the line. It is expected that the expansion of highway transportation will continually increase the territory tributary to the system. Canalization of the Guadalupe River to Cuerio, the San Antonio River to San Antonio, and the Trinity River to Fort Worth is also looked to as providing sources of future feeders.

In the large shipments from the deep water ports of Corpus Christi, Houston, Texas City, Galveston, Port Arthur, Beaumont, Orange and Lake Charles, there are seen possibilities of transporting products by barge for reshipment. The most important outgoing products will be rice from East Louisiana and East Texas; salt from some of the world's greatest salt mines; sulphur from the United States' only sulphur producing area; petroleum products from the world's greatest refining district, and cotton, cottonseed and agricultural products from one of the outstanding agricultural regions of the world. The incoming cargoes will be manufactured goods of all kinds and also probably much steel tonnage.

**Creosoted Ties, Piling, Poles and Timbers****Creosote Oil****Docks for Ocean Vessels****American Creosote Works, Inc.**

New Orleans, La.

**Atlantic Creosoting Co., Inc.**

Savannah, Ga.

Norfolk, Va.

**Gulf States Creosoting Co.****PLANTS AT**HATTIESBURG, MISS., MERIDIAN, MISS., JACKSON, MISS.,  
SLIDELL, LA., BRUNSWICK, GA., BIRMINGHAM, ALA.

Main Office: HATTIESBURG, MISS.

**CREOSOTED MATERIAL****INCLUDING**Lumber, Timbers, Piles, Telephone and  
Telegraph Poles and Cross-Arms,  
Cross-Ties, Etc.

We also treat with Zinc Meta-Arsenite (colorless)

**GUNITE  
CONSTRUCTION COMPANY**Specialists in all kinds of Cement Gun Work  
Contracts taken everywhere—Estimates furnished  
Room 1630 GRAYBAR BLDG., 420 Lexington Ave., N. Y. City  
Telephone Mohawk 4-5675**GUNITE METHOD****CEMENT GUN CONSTRUCTION**Contracts Executed Anywhere  
GUNITE CONCRETE AND CONSTRUCTION CO.  
BARCLAY A. GREENE, President  
1301 Woodswether Road, Kansas City, Mo.  
BRANCH OFFICES: St. Louis, Mo.; Chicago, Ill.; Birmingham, Ala.;  
Dallas, Tex.; New Orleans, La.; Atlanta, Ga.**THE CUTLER MAIL CHUTE**

Is backed by—

An experience of fifty years.

A factory equipped and operated for our  
own work exclusively.

A force of experienced erectors in the field.

A determination to keep our product and  
service up to the highest possible standard.

Correspondence Invited.

**CUTLER MAIL CHUTE COMPANY**GENERAL OFFICES AND FACTORY  
ROCHESTER, NEW YORK**There are . . .****No Uncertainties  
in Dixie Grading  
Methods!**The production of Dixie Poles is an operation  
of major proportionsAdequate facilities in space for  
sorting and drying—and in me-  
chanical equipment, too—supple-  
ment the finest of Dense Long Leaf  
Yellow Pine cut from our own timber.All Dixie products pass under  
the eye of our expert inspector  
—a definite factor for sustained  
uniformity in grading.**Selling Agents**

GEORGE G. LEAVETTE

Room 416  
25 Broadway  
New York City

F. B. MERRITT

Room 1560  
First National Bank Bldg.  
Detroit, Mich.**JACKSON LUMBER Co.***Manufacturers*

Lockhart, Alabama

A CROSSETT WATZEK GATES INDUSTRY

## WORK ON OFFICE BUILDING

### Structure Is Third Unit of \$15,000,000 Building Project

St. Louis, Mo.—The construction of foundations for the new North American Building to be erected here for the Illinois Terminal Railroad System, subsidiary of the North American Light and Power Company, Chicago, will soon be started, it is announced. Planned for 20 stories ultimately, only 10 stories will be erected at this time. This structure, to serve as a passenger station and office building, will constitute the third unit of a \$15,000,000 building program in St. Louis for the North American Light and Power Company—the other two units being the Midwest Building, universal warehouse of the company, and the elevated-surface-subway system from McKinley bridge to Twelfth street and Washington avenue.

The new structure will be U-shaped, the open part of the U facing High street which is an extension of Twelfth north of Washington avenue. The completed building will be of the set-back type, but the portion to be erected presently will rise straight from the street. The entire building will be air-conditioned, the air to be drawn into the structure from the outside and passed through water, thus removing dust and regulating moisture. The conditioned air will then be sent throughout the building to be individually regulated by tenants by means of unit devices. Air conditioning equipment and heating equipment will be separate, although a single fan may be utilized for both. In the first ten stories there will be about 91,000 square feet of rentable floor space, with about 190,000 square feet in the completed building. The base of the structure for two stories will be of polished black granite and above that ornamental brick will be used. Foundation caissons will be sunk through to rock, 40 or 50 feet below the street level.

Two floors will be devoted to offices of the Illinois Terminal. There will be two principal entrances—one on High street to provide access to the passenger station and the other at the eastern end of the building on Washington avenue leading to the office portion. Floors will be served by four high speed elevators of the signal control type. The substreet level passenger station will be reached from the ground floor lobby, both by stairs and escalators, the first level below the ground to contain a waiting room, ticket offices, etc., and below that level will be the track level to be served by two tracks at once, while two others are planned for the future.

Mauran, Russell & Crowell, St. Louis,

are the architects, and the Stone & Webster Engineering Corporation, Boston, Mass., are consulting engineers.

### Ask Power Plant Bids

Sullivan, Mo.—Bids will be opened November 12 at the office of N. W. Shaffer, city clerk, and opened by the Board of Aldermen as soon thereafter as convenient, for the construction complete of a municipal electric light and power plant here, covering the following sections: (1) Brick power house building 43 by 50 feet, and oil storage tank of 15,000 gallons capacity; (2) two Diesel engines, generators, exciters and auxiliaries of approximately 500 total horsepower; (3) water cooling tower for circulating water; (4) switchboard—8 panel—600 K. W. ultimate capacity; (5) electric distribution system material f. o. b. cars; (6) construction of distribution system—tools and labor only; (7) furnishing and installing electric connections and station wiring. The W. A. Fuller Company, St. Louis, are the engineers.

### History of Frisco Lines

The dramatic history of Frisco Lines, which began in 1849 when the Missouri Legislature authorized incorporation of the "Pacific Railroad" will be broadcast over radio station KWKH at Shreveport, La., from 8.30 to 9.30 p. m., November 6. W. L. Huggins, Jr., assistant traffic manager of the Frisco at St. Louis will make the address.

The Frisco of today, a great Southwestern carrier of 6000 miles with a normal strength of 30,000 employes to whom it pays annual wages in excess of \$39,000,000, is in great contrast to the pioneer road of 82 years ago which was empowered to build a line from Franklin, Mo., (now Pacific) to Rolla, 77 miles away. The Frisco's history presents a dramatic view of construction and financing problems of the rail builders in the last century. The road went through several receiverships and several subsequent reorganizations in which its name was often changed; it was badly damaged during the Civil War, and not until June 16, 1916, when the property was sold under foreclosure to the present company, did the Frisco finally come into its own.

For 75 years the Frisco had been striving to reach the Pacific Ocean and in 1928 it suddenly turned to the Southeast and built to tidewater at Pensacola, Fla. Today the port of Pensacola is the Frisco's outlet to the commerce of the seven seas, and through its connection with that port the dreams of its early-day builders at last have been realized.

### Texas Industrial Opportunities

In a series of addresses before commercial organizations and educational institutions in several Texas cities, Dr. Henry Mace Payne, consulting engineer of the American Mining Congress, recently discussed the changing economic conditions confronting industry, with particular reference to possibility of greater commercial development in Texas.

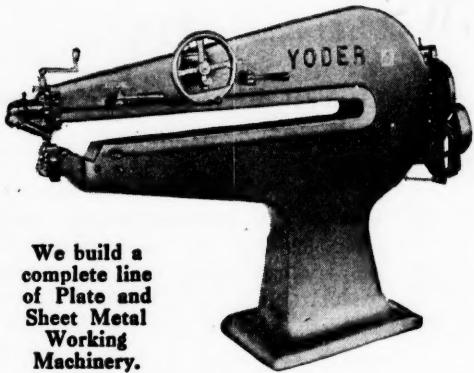
Pointing out that the state is rich in natural resources, Dr. Payne suggested that men, money and markets are quite adequate for the commercial development of its raw materials. Referring to the cross-haul of raw materials from one state to another for fabrication and their return in manufactured form, he said there is "no reason why Texas should not profit and add to its increment of wealth by fabricating many of these articles, as it possesses adequate power, labor and transportation facilities available near their sources of supply." Further, said Dr. Payne:

"Texas can produce all the fruit and vegetables it needs, yet it imports annually \$50,000,000 worth from California. Texas produces more cotton than any other state, yet it has only 5700 cotton mill operatives and buys most of its cotton clothing and cotton goods from other states. Texas produces more leather than any other state, yet it buys annually \$55,000,000 worth of shoes made elsewhere. Texas produces more wool and mohair than any other state, but it has not a single wool or mohair factory. Texas has an abundance of fire-proofing materials for building purposes.

"Concerted effort in the development of industry will create the necessary values as a basis for sound taxation, and the removal or avoidance of legislative interference with industry will promote harmonious relations between men of capital and holders of natural resources."

### \$2,450,000 San Antonio Bonds

San Antonio, Tex.—The city opens bids November 16 for the purchase of \$2,450,000 municipal improvement bonds, embracing the following issues: Sanitary sewers, \$400,000; street widening and extensions, \$100,000; street paving, \$500,000; storm sewers and river improvement, \$400,000; improvements for police and fire departments, \$300,000; bridge construction, \$150,000; park improvements, \$450,000; city hospital construction, \$150,000. Proposals will be received for the entire issue or for one or more separate issues. C. M. Chambers is mayor and James Simpson is city clerk.



## Yoder No. S-60 Rotary Shear

This shear, with 60" gap to accommodate large sheets, will cut any weight of sheet metal up to 14 gauge. It can be used for short curves in any direction and will cut circles without running in from the side of material. This machine has two speeds controlled by hand lever and is equipped with a Yoder friction clutch. Write for further information.

We build a complete line of Plate and Sheet Metal Working Machinery.

**THE YODER COMPANY**  
W. 55 ST. and WALWORTH AVE., CLEVELAND, OHIO  
PLATE AND SHEET METAL MACHINERY SPECIALISTS

### MYERS CYLINDERS



Turn your back to cylinder troubles—avoid complaints and limited service years—sell and install Myers Cylinders—the complete line adapted for any style or type of hand or power pump. Brass, Brass Lined or Polished Styles in all standard sizes. Quality built throughout. Reasonably priced. Satisfactory and profitable. Your inquiry will receive prompt attention.

THE F. E. MYERS & BRO. CO., Ashland, O.

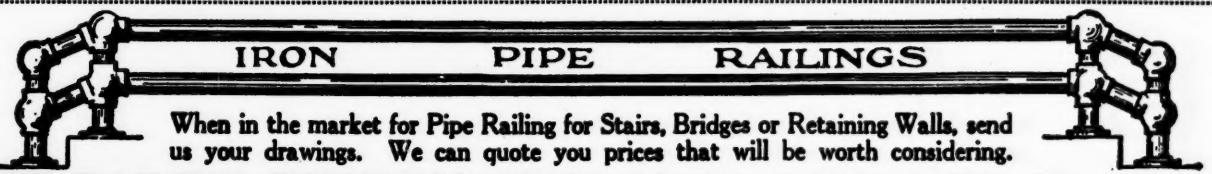
### KROMOTAN LEATHER BELTING

Highest Pulley Adhesion

For High Speeds  
High Pulley Ratios  
Idlers or Tightners

CHARLOTTE LEATHER BELTING CO.  
Plant: CHARLOTTE, N. C.

IRON PIPE RAILINGS



When in the market for Pipe Railing for Stairs, Bridges or Retaining Walls, send us your drawings. We can quote you prices that will be worth considering.

PIPE RAILING CONSTRUCTION CO., Long Island City, New York

AMERICAN ELEVATORS  
PASSENGER AND FREIGHT  
AMERICAN  
ELEVATOR and MACHINE CO., INC.  
Established in 1898  
LOUISVILLE, KENTUCKY

CEMENT-GUN CONSTRUCTION CO.  
**CONCRETE**  
16 years experience placing sand and cement mortar with compressed air. Call our Engineering or Contracting Department for service.  
537 S. Dearborn St. Oliver Building Woolworth Building  
CHICAGO PITTSBURGH NEW YORK

TARPAULINS • TENTS  
ROLL DUCK and BURLAP

It will pay contractors and manufacturers to get our prices. Write our nearest plant today.

Fulton Bag & Cotton Mills  
Atlanta St. Louis Dallas  
Minneapolis Brooklyn New Orleans Kansas City, Kan.

THE GEORGIA MARBLE COMPANY  
Producers and Manufacturers of  
**GEORGIA MARBLE**  
Tate, Georgia  
Atlanta Chicago Cleveland Dallas New York

UNITED'S  
CORK PIPE COVERING

CORKBOARD INSULATION FOR COLD  
CORK TILE FLOORS  
Send for our

UNITED CORK COMPANIES, Main Office and Factories, LYNDHURST, N. J.

SERVICE  
STORAGE ROOMS, TANKS, ETC.  
BULLETIN BOARDS  
Literature and prices.

ROOF INSULATION

## FINANCIAL NEWS

### Bond Issues Proposed

Ala., Mobile—Mobile County Bd. of Revenue and Road Comrs., E. L. Laudendine, opens bids Dec. 1 for \$400,000 road bonds; part of \$5,000,000 authorized in 1928.

La., Baton Rouge—State Highway Comsn., O. K. Allen, Chmn., cancelled sale of \$12,000,000, not to exceed 5% coupon or registered highway bonds. 10-1

La., Gretna—Jefferson Parish Police Jury, W. Hepting, Sec., rejected bids for \$75,000 excess revenue bonds; may sell privately. 10-22

La., Lafayette—City, Robert L. Mouton, Mayor, reported, votes Nov. 30 on \$125,000 refunding bonds. 9-3

La., Leonville—Commsrs. of Arnaudville Gravity Drainage Dist. No. 17, Dr. F. Ocateve, Sec., opens bids Nov. 12 for \$50,000, 6% acreage tax bonds.

La., Plaquemine—City Council voted to offer \$50,000, 6% street bonds.

Miss. Gulfport—City, Jos. W. Milner, Mayor, may call election on port improvement bonds.

Miss. Jackson—Governor T. G. Bilbo signed \$5,000,000 highway construction bond issue bill; bonds to be offered for sale by State Bond Comsn.

Mo., Lees Summit—City, reported, votes Nov. 10 on \$50,000 bonds: \$40,000, electric plant; \$10,000, waterworks.

N. C., Canton—Local Government Comsn., Chas. M. Johnson, Dir., Raleigh, approved \$75,000 water bonds; to be offered at once; D. J. Kerr, Mayor.

Okl., Nowata—City votes Nov. 10 on \$12,500 poor farm purpose bonds.

Okl., Ponca City—City votes in November on \$40,000 sewer bonds.

Okl., Tecumseh—Pottawatomie County Commsrs. ordered issuance of \$35,062 funding bonds.

Okl., Tulsa—City rejected bids for \$275,000 grade separation and hospital bonds. 10-22

Tenn., Knoxville—City Council, reported, passed resolution authorizing issuance of \$1,000,000 revenue anticipation bonds.

Tenn., Nashville—State Funding Bd., Ida-lee Richardson, Asst. Sec., opens bids Nov. 10 for \$5,000,000, not to exceed 5% bonds for taking up deficit notes authorized by 1929 Legislature.

Tex., Austin—City, Adam R. Johnson, City Mgr., opens bids Nov. 17 (not Nov. 15) for \$475,000 bonds: \$75,000, parks and playgrounds; \$100,000, public market; \$150,000, fire station; \$150,000, public library. 10-29

Tex., Dumas—Moore County, W. W. Dougherty, County Clk., votes Dec. 12 on \$250,000, 5½% road bonds. 9-17

Tex., Edna—Jackson County Road Dist. No. 1 recently defeated \$85,000 bonds; Road Dist. No. 3 voted \$100,000 bonds. 9-17

Tex., El Paso—El Paso County Commsrs. Court called election for Nov. 28 on \$295,000 road bonds.

Tex., Llano—Llano County opens bids Dec. 14 for \$9000 refund warrants.

Tex., San Antonio—City, C. M. Chambers, Mayor, opens bids Nov. 16 for \$2,450,000 4½%, \$1000 denom. bonds: Bridge, \$150,000; sanitary sewers, \$400,000; R. B. Green Hospital, \$150,000; street openings and widening, \$100,000; street paving, \$500,000; fire and police, \$300,000; parks, \$450,000; river improvement and storm sewers, \$40,000.

W. Va., Williamstown—City votes Nov. 17 on \$20,000 water bonds.

### Bond Issues Sold

La., Cameron—Cameron Parish Gravity Drainage Dist. No. 3, E. R. Hunt, Dist. Sec., sold \$12,000 bonds to Lake Arthur Dredging Co., Beaumont, Tex., as 6s, at par. 8-27

Miss., Meridian—Clarke County Suprs., W. B. Raley, Chancery Clk., sold \$50,000 6% funding bonds to Meridian Finance Corp., Meridian. 10-1

Mo., Maysville—City sold \$50,000 waterworks bonds to Prescott, Wright, Snider Co., Kansas City, as 5s, at par. 9-24

N. C., Charlotte—City, L. L. Ledbetter, City Accountant, sold \$450,000 note issue,

through Local Government Comsn., C. M. Johnson, Dir., Raleigh, to local banks, with 6% interest rate; Union National Bank, \$150,000; Charlotte National Bank, \$50,000; Merchants and Farmers Bank, \$25,000; Commercial National Bank, \$80,000, and Independence Trust Co., \$75,000.

S. C., Charleston—Charleston County sold \$11,000 bonds to William J. Leonard, County Treas., at 4.50 per cent.

Tenn., Fayetteville—Lincoln County sold \$75,000 revenue anticipation notes to American National Co., Nashville.

Tex., Canyon—City sold \$18,000 waterworks bonds to Randall Co., Canyon, at 102.25.

Tex., Marlin—City, J. M. Kennedy, Mayor, sold \$25,000 paving bonds to First National Bank of Marlin. 9-3

Tex., Mineral Wells—City sold \$22,000, 5½% serial refunding bonds to Brown-Crummer Co., Wichita, Kans.

Tex., San Angelo—Tom Green County recently sold \$9551, 6% warrants to Garrett & Co., Dallas, at par.

Tex., Yoakum—City, reported, sold \$258,000 water revenue bonds to Broussard-Warfield Co., Contr., Beaumont.

### Building & Loan Associations

Tenn., Jackson—Volunteer State Building & Loan Association, capital \$500,000, chartered; H. C. Pearson, T. I. Taylor.

### New Financial Corporations

Mo., Joplin—R. & S. Investment Co., capital \$10,000, chartered; W. H. Spurgeon, 68 Porter St.

N. C., Boone—Peoples Industrial Bank, capital \$50,000, chartered; R. T. Greer.

Commercial-American Bank & Trust Co., R. T. Moore, Chmn. of Bd., and Continental Trust & Savings Bank, G. M. Hearne, Chmn. of Bd., both Shreveport, La., completed merger; to be known as Continental-American Bank & Trust Co.

First National Bank, O. O. Cooper, Pres., and Citizens National Bank, J. A. Graham, Pres., both Hinton, W. Va., merged.

Maben Home Bank, Starkville, Miss., reopen with following temporary officers: D. W. Johnson, Pres.; Marvin Bland, V. Pres.; J. H. Douglas, Cashier.

### Houston Bank Changes

Houston, Tex.—By its purchase of the Public National Bank and Trust Company, the National Bank of Commerce assumes third place among Houston banks, it is declared, and creates one of the strongest banks in the South. According to its last statement, the National Bank of Commerce had capital, surplus and undivided profits of \$3,642,406, with deposits as of July 1, 1931, of \$14,976,670. The Public National had capital of \$800,000, surplus and undivided profits of \$407,550, and deposits of \$7,795,000.

The Houston National Bank, one of the largest in the city, has been acquired by the Joseph F. Meyer group from the Governor Sterling interests, the management of the institution passing into the hands of Joseph F. Meyer, Jr., and his brothers George B. Meyer and Frank Meyer. A report as of September 29, 1931, showed the bank to have capital, surplus and undivided profits of \$1,805,634 and deposits of \$9,121,751.

### General Electric Unemployment Relief

"By a sweeping majority," as the General Electric Company puts it, the new unemployment relief plan offered to employees of the company has been accepted. Tabulation of the votes up to November 1 showed that 89.5 per cent of those employees eligible to vote had cast their ballots and that 97 per cent of these ballots favored adoption of the plan. The total number of eligibles is slightly more than 39,000.

The plan provides for rotation of available work and other means by which hourly-rated and piecework employees on the payroll November 1 may be assured of receiving, during the following six months, not less than the equivalent of half of their average full-time weekly earnings up to an average of \$15 per week, and their actual earnings in case the latter amount to more than \$15 per week. The unemployment emergency fund of the company, to which all classes of employees earning 50 per cent or more of their average full-time earnings now contribute 1 per cent of their earnings, is augmented by increasing this contribution to 2 per cent, the company contributing an equal amount.

### No Fuses at Ridgeville

The use of small circuit breakers has entirely eliminated fuses in domestic distribution of electric current at Ridgeville, S. C., which is understood to be the first town where such instruments have been exclusively installed. This distribution system is the result of the South Carolina Power Company's efforts to build a larger rural load without incurring a correspondingly larger increase in cost of operation. In addition to an average of 250 consumers within the town limits, there are lumber mills, brickyards, gins and grist mills in the community. Outdoor meters are installed exclusively.

### \$250,000 Water Supply

Hobart, Okla.—The city of Hobart, O. A. Kirby, mayor, recently voted a bond issue of \$250,000 for a new water supply, which will involve the construction of an earthen dam for a storage reservoir and an 8½-mile water line of 14-inch cast iron or steel pipe. W. R. Holway, Tulsa, Okla., is the consulting engineer.

WE extend the facilities of our organization to those desiring information or reports on companies with which we are identified.

### Electric Bond and Share Company

Two Rector Street

New York

**We Buy Bonds**  
 City, County, School and Road from  
 Municipalities and Contractors  
 WRITE  
**THE PROVIDENT SAVINGS BANK & TRUST CO.**  
 CINCINNATI OHIO

Delaware Corporations  
 Forms, Law and Pointers  
*Estimates of Cost Furnished Without Cost*  
**DELAWARE REGISTRATION TRUST CO.**  
 900 Market Street  
 Wilmington, Del.  
 J. Ernest Smith, President and General Counsel  
 Chas. Warner Smith, Vice-President  
 Harry W. Davis, Secretary and Treasurer.

**YOUNG & SELDEN COMPANY**  
 MANUFACTURING  
**Bank and Commercial Stationers**  
 BALTIMORE, MD.

**NOTICE OF SALE:**  
 The property of The Williamson Mills Company, Charleston, S. C., will be offered to the highest bidder at public auction in front of the County Court House, Charleston, S. C., 12:00 o'clock Noon on November 24th, 1931. All lands, buildings, equipment, etc., will be sold to satisfy the outstanding First Mortgage Bonds.

*Details and specifications as to equipment, etc., will be furnished by addressing the undersigned.*

**SOUTH CAROLINA SECURITY COMPANY**  
 CHARLESTON, S. C.

### The South's Business

Our experience and success warrant our wanting to identify this bank further with the business and progress of the South.

Inquiries about our service will be treated as coming from friends.

### BALTIMORE COMMERCIAL BANK

GWYNN CROWTHER, President

26 South Street, Baltimore, Md.

Capital and Surplus \$1,350,000.00

Member Federal Reserve System

### THE OSCAR T. SMITH & SON CO.

*Manufacturing*

### BANK AND COMMERCIAL STATIONERS

407-9-11 E. Saratoga Street

BALTIMORE, MD.

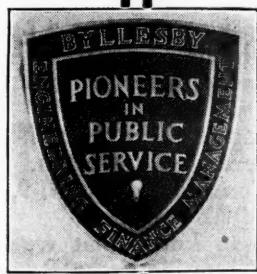
CHARACTER

QUALITY

— SERVICE —

### BRONZE TABLETS

Architectural  
 Bronze  
 for Banks,  
 Buildings and  
 Mausoleums



J. S. HEATH CO., Waukegan, Ill.

# DAILY CONSTRUCTION BULLETIN

Published by  
 The Manufacturers Record

*The quickest news service available covering industrial activity in the SOUTH.*

# LEADERSHIP—

## Today's Greatest Need

**A**S evidence of accepted leadership in reader interest—an intangible asset of great value difficult to determine quantitatively, yet one which assures favorable attention to your advertising message on the part of the people you wish to reach—we submit the following:

"The Manufacturers Record, for some reason, seems to get into the economic problems on a sounder basis than its contemporaries. At any rate, you meet the situation squarely and that is half or more of success in any undertaking."—*R. I. Ingalls, President, Ingalls Iron Works Co., Birmingham, Ala. August 10, 1931.*

"You might be interested to know that there are very few issues of your magazine from which I do not take two or three important clippings for my special files."—*Geo. M. Verity, The American Rolling Mill Co., Middletown, Ohio. August 8, 1931.*

"I really believe the Record could be termed more, or I should say, classed as the leading journal in the South's development and, therefore, considered almost the Bible on the desk of every president and executive of the leading industries of the South. Needless to say, perhaps, yet true, that our competitors see its value as an advertising medium, else would not continue to use its pages for displaying their ads."—*J. R. Whitman, Atlanta, Ga. July 9, 1931.*

"I regard it the greatest paper in its line published in the South."—*J. J. Lawton, President, Hartsville Oil Mill, Hartsville, S. C. July 3, 1931.*

"Your magazine we regard as a necessity and not a luxury and feel that it is worth twice the money you ask for it."—*J. C. Hill, Secretary and Treasurer, Hill Veneer Co., High Point, N. C. June 6, 1931.*

"The information in the Record is invaluable to contractors like ourselves. I don't see where you get it all."—*Swinney & Coleman, contractors and engineers, Opelousas, La. April 9, 1931.*

"We want you to know that we appreciate to the fullest extent the influence of the Manufacturers Record in the South. As a matter of fact, we do not know of any other paper that anywhere comes close to wielding the influence you have in that section of the country."—*National Fireproofing Corp., Pittsburgh, Pa. April 13, 1931.*

"We congratulate you on your unusually fine publication. To us it is most helpful, not only being advised of work contemplated, work in prospect, work advertised, awarded and constructed, but for the other very fine information which pertains to the growth of the Southern states in which we have the greater part of our operation."—*Roberts Paving Co., highway contractors, Salisbury, Md. April 18, 1931.*

"I think it is one of the greatest magazines published."—*W. D. Smyth, Gaffney, S. C. Sept. 22, 1931.*

**MANUFACTURERS RECORD**  
Baltimore, Md.

**Pennsylvania Garment Plant  
Moves to Wheeling, W. Va.**

Wheeling, W. Va.—Operations will be started soon by Buffalo Garment Corp., which has moved its factory and offices to Warwood, Wheeling, from Shenandoah, Pa. One hundred operators will be employed, and within six months it is expected that 100 more will be taken on to manufacture mill garments and other apparel. With domestication of the organization, the name will be changed to the Wheeling Garment Co. B. Minenberg will continue as plant manager; H. Ruderman to be in charge of sales. The Englehart Woolen Mills, Albright, W. Va., will retain its interest in the company, and will furnish as heretofore its complete output of fabric to the Wheeling factory. The building at Warwood is of daylight construction,

equipped with a unit steam heating system. It contains 10,000 square feet of floor space.

**Developing Louisiana Sulphur**

Abbeville, La.—Ground was recently broken by Arthur Barba, Sr., president of the Jefferson Lake Oil Co., Inc., for a sulphur production plant his organization will develop near here on the shore of Lake Peigneur. Approximately \$500,000 has so far been expended by the company for preliminary work in outlining the sulphur deposit in the bed of the lake. Lease has been obtained from the State of Louisiana. Initially, the plant, which is scheduled for completion within the next four months, will have a minimum capacity of 100,000 tons and will occupy 85 acres. The main building will be 70 by 100 feet. Other structures

will include a warehouse, an office building, an 80-foot water tower of 30,000-gallon capacity, a 15,000-barrel oil tank, sulphur vats aggregating 1,000,000 tons in capacity, two 8-inch water wells, and a quadruple pipeline 6000 feet in length.

**\$569,000 Federal Building Bid**

Greensboro, N. C.—Low bid to erect a new Federal building here was submitted to the Treasury Department, Washington, Jas. A. Wetmore, Acting Supervising Architect, by the George H. Rommel Co., Louisville, Ky., at \$569,000, using plain buff limestone. Algernon Blair, Montgomery, Ala., submitted low bid at \$613,717, using limestone with light gray veining. These estimates do not include elevators. The new structure will house the post office, Federal court and collector's offices.

**— PROPOSALS —**

**BOND ISSUES**      **BUILDINGS**      **PAVING**      **GOOD ROADS**

Bids close December 8, 1931.

**SEALED BIDS**, in triplicate, subject to the conditions contained herein, will be received by the Veterans Administration, Room 764, Arlington Building, Washington, D. C., until 2:30 P. M., December 8, 1931, and then publicly opened for furnishing all labor and materials and performing all work required for constructing and finishing complete at VETERANS ADMINISTRATION HOME, BILOXI, MISSISSIPPI, BUILDINGS AND UTILITIES, including roads, walks, grading and drainage. This work will include excavating, concrete piling, reinforced concrete, hollow cement blocks, hollow tile, brick work, cut stone, cast stone, slate stair treads, marble work, terrazzo, floor and wall tile, compressed asphalt tile and linoleum floors, iron work, flagpole, steel sash, steel stairs, steel shelving, cabinets and partitions, shingle tile, metal and built-up roofing, roof ventilators, metal lathing, plastering, sound-deadening, carpentry, metal weather strips, insect screens, platform scales, painting, glazing, hardware, plumbing, refrigerating and ice-making plant, boiler plant equipment, heating and ventilating, electrical work, electric elevators, steel water tank and tower, sewage disposal works, and outside sewer, water, gas, steam and electric distribution systems. **SEPARATE BIDS** will be received for (a) General Construction of Hospital Buildings, etc., including alternates; (b) Plumbing, Heating, Electrical Work and Outside Distribution Systems for all work included in Item 1; (c) Electric Elevators; (d) Steel Water Tank and Tower; (e) Refrigerating and Ice Making Plant and (f) General Construction of Nurses Quarters, Garage and alternates including Plumbing, Heating, and Electrical Work and outside service connections; all as set forth on bid form. Bids will be considered only from individuals, firms or corporations possessing satisfactory financial and technical ability, equipment and organization to insure speedy completion of the contract and in making awards, the records of bidders for expedition and satisfactory performance on contracts of similar character and magnitude will be carefully considered. At the discretion of the Administrator, drawings and specifications may be obtained upon application to the Construction Service, Room 764, Arlington Building, Washington, D. C. While no deposit will be necessary, return of the drawings and specifications within ten days after date of opening bids will be required. In case no bid is to be submitted, the return of plans and specifications, as soon as this fact has

**GENERAL INFORMATION**

**About Proposal Advertising  
in Manufacturers Record**

**PUBLICATION DAY: Thursday.**  
**FORMS CLOSE: 10 A. M. Tuesday.**

When too late to send copy by regular mail to reach us by 10 A. M. Tuesday, forward by night letter or air mail when possible

**THE  
DAILY CONSTRUCTION BULLETIN  
OF THE  
MANUFACTURERS RECORD**

Published every business day, gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Construction Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened or when daily insertions are necessary to meet legal requirements.

*The rate is the same for both publications—35 cents a line each insertion.*

been determined, and before the date for opening bids, is requested. Compliance with the requirement and with the request indicated will be considered in connection with future applications for drawings and specifications. George E. Ijams, Assistant Administrator. November 2, 1931.

Bids close November 12, 1931.

**TREASURY DEPARTMENT**, office of the supervising architect, Washington, D. C., October 22, 1931. **SEALED BIDS**, in triplicate, subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., November 12, 1931, for furnishing all labor and materials and performing all work for the remodeling and enlarging of the U. S. post office at Martinsville, Va. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office, in the discretion of the supervising architect, by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be acceptable. JAS. A. WETMORE Acting Supervising Architect.

Bids close December 18, 1931.

**U. S. Engineer Office, Rock Island, Illinois.** **SEALED BIDS**, in triplicate, will be received until 3:00 P. M., December 18, 1931, and then publicly opened, for furnishing all labor and materials, and performing all work for constructing a Roller-Gate Dam, power house, interceptor sewer and sea-wall, Lock and Dam No. 15, Mississippi River. Further information on application.

Bids close November 12, 1931.

**TREASURY DEPARTMENT**, office of the supervising architect, Washington, D. C., October 22, 1931. **SEALED BIDS**, in triplicate, subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., November 12, 1931, for furnishing all labor and materials and performing all work for the construction of the U. S. post office, etc., at Fort Valley, Ga. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office, in the discretion of the supervising architect, by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be acceptable. JAS. A. WETMORE Acting Supervising Architect.

Bids close November 18, 1931.

**TREASURY DEPARTMENT**, office of the supervising architect, Washington, D. C., October 21, 1931. **SEALED BIDS**, in triplicate, subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., November 18, 1931, for furnishing all labor and materials and performing all work for the construction of the U. S. post office, etc., at West Point, Ga. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office, in the discretion of the supervising architect, by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE Acting Supervising Architect.

Bids close November 17, 1931.

WAR DEPARTMENT, office Constructing Quartermaster, Fort Bragg, N. C. Sealed Proposals, in triplicate, will be received in this office until 10:00 A. M., November 17, 1931, and then publicly opened, for the construction and completion of addition to monument at Cowpens Battlefield, near Ezell, S. C. \$10.00 deposit certified check payable to Treasurer of United States required for plans and specifications. A certified check or bid bond in the amount of \$200.00 will be required with each proposal. Further information on request.

Bids close November 12, 1931.

War Department, Office Constructing Quartermaster, Fort Bragg, N. C. Sealed proposals in triplicate will be received in this office until 10:00 A. M., November 12, 1931, and then publicly opened, for the construction and completion of concrete streets, combined curb and gutter, sidewalks, drainage and grading, at Fort Bragg, North Carolina. \$15.00 deposit certified check payable to Treasurer of United States required for plans and specifications. A certified check or bid bond for 10% of the amount of each bid will be required with each proposal. Further information on request.

Bids close December 1, 1931.

SEALED BIDS, in triplicate, subject to the conditions contained herein, will be received by the Veterans Administration, Room 764, Arlington Building, Washington, D. C., until 2:30 P. M., December 1, 1931, and then publicly opened, for furnishing all labor and materials and performing all work required for constructing and finishing complete at VETERANS ADMINISTRATION HOME, LEAVENWORTH, KANSAS, HOSPITAL BUILDING AND NURSES QUARTERS, including roads, walks, grading and drainage. This work will include excavating, reinforced concrete, hollow tile, brick work, cut stone, slate stair treads, marble work, terrazzo, floor and wall tile, rubber tile, compressed asphalt tile and linoleum floors, iron work, steel sash, steel stairs, fire escapes, steel shelving, cabinets and partitions, metal linen chutes, slate, metal and built-up roofing, roof ventilators, skylights, metal lathing, plastering, sound deadening, carpentry, metal weatherstrips, insect screens, painting, glazing, hardware, plumbing, refrigerating, heating and ventilating, electrical work, electric elevators, and outside sewer, water, gas, steam and electric service connections. SEPARATE BIDS will be received for (a) General Con-

struction; (b) Plumbing, Heating, Electrical work and outside service connections; (c) Electric Elevators; and (d) Refrigerating; all as set forth on bid form. Bids will be considered only from individuals, firms or corporations possessing satisfactory financial and technical ability, equipment and organization to insure speedy completion of the contract, and in making awards the records of bidders for expeditious and satisfactory performance on contracts of similar character and magnitude will be carefully considered. At the discretion of the Administrator, drawings and specifications may be obtained upon application to the Construction Service, Room 764, Arlington Building, Washington, D. C. While no deposit will be necessary, return of the drawings and specifications within ten days after date of opening bids will be required. In case no bid is to be submitted, the return of plans and specifications, as soon as this fact has been determined, and before the date for opening bids, is requested. Compliance with the requirement and with the request indicated will be considered in connection with future applications for drawings and specifications. GEORGE E. IJAMS, Assistant Administrator. October 26, 1931.

Bids close November 10, 1931.

### Maryland Highway Work

DEPARTMENT OF PUBLIC WORKS  
STATE OF MARYLAND  
STATE ROADS COMMISSION

#### NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building six sections of State Highway as follows:

Allegany County, Contract No. A-111-64—

One section of State Highway along the Oldtown-Paw Paw Road, from the end of Contract No. A-110 at Town Creek to Paw Paw for a distance of 6.13 miles (Concrete).

Baltimore County, Contract No. B-194-42—

One section of State Highway for the paving of the track area on the Belair Road from Overlea Avenue to Baltimore City Line for a distance of 0.11 mile (Sheet Asphalt).

Calvert County, Contract No. C-56-84—One section of State Highway from Dunkirk toward Ferry Landing for a distance of 1.0 mile, and from the Southern Maryland Boulevard-Mt. Harmony Road toward Owings for a distance of 0.91 mile, total 1.91 miles (Gravel).

Cecil County, Contract No. Ce-121-23—One section of State Highway along East

side of Bridge Street in Elkton for a distance of 250 feet (Concrete).

Montgomery County, Contract No. M-178-32—One section of State Highway for the widening of Montgomery Avenue through Rockville and the Washington Street approach thereto for a distance of 0.50 mile (Concrete).

Prince George's County, Contract No. P-155-84—One section of State Highway from Ritchie toward Upper Marlboro for a distance of 6.43 miles (Gravel) will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M. on the 10th day of November, 1931, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check, payable to the State Roads Commission of Maryland, as required by Sec. 6, Chapter 539, Acts of 1931, of the amount as set forth in the proposal form.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 27th day of October, 1931.

G. CLINTON UHL, Chairman.  
L. H. STEUART, Secretary.

Bids close November 17, 1931.

### Roads and Bridges

Richmond, Va.

Sealed bids will be received 10 A. M. Tuesday, November 17, 1931, Va. Dept. of Highways, State Office Bldg., Richmond, Va., for the construction of:

Proj. 295—Length 0.921 Mi. Sq. Yds.; Type Conc. Base, 6,567 Lin. Ft., Conc. Curbing 9,099 Sq. Yds., Surface Cold Bit., Pavement 16,537.

Proj. 700—Br. over Flat Creek, 97-ft. 6-in. cu. yds. A conc. 199.3, lbs. reinf. steel 35,740.

Proj. 735AB—2 Mi. Soil, cu. yds. excava. 21,809, cu. yds. soil, 6,544, br. over Banister Riv., cu. yds. A conc. 267.9, lbs. reinf. steel 45,760, lbs. struct. steel 78,000.

Proj. 735CD—3 Mi. Soil cu. yds. excava. 38,188, cu. yds. soil 10,259.

Details obtainable upon request.

# CLASSIFIED OPPORTUNITIES

### MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES

#### TRAVERTINE

FLORIDA TRAVERTINE, 34½ acres. Will sell outright or a cash deposit with royalty on the rock. B. CORBITT, 210 W. Curtis St., Tampa, Fla.

#### GRANITE DEPOSITS

FOR SALE—Very fine granite deposit of about 50 acres; also land for trucking near Lancaster, S. C. Address X. Y. Z. Lancaster, S. C.

#### BUSINESS OPPORTUNITIES

CENTRALLY LOCATED SOUTHERN MANUFACTURER with large, well-equipped plant desires new line Iron-Steel products for manufacture. Address No. 9140, care of Manufacturers Record.

MANUFACTURERS—Write for our FREE Classification Sheets of inventions for sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER MFG. CO., 578 Enright, St. Louis, Mo.

#### Rates, Terms and Conditions

RATES: 30 cents a line each insertion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordinary length to line. When the advertisement contains a number of long words proper allowance should be made.

##### Rates for Special Contract:

100 lines 28c a line  
300 lines 26c a line  
500 lines or more 25c a line

TERMS: For transient advertising cash with order; check, post office or express money order or stamps accepted.

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

CONDITIONS: No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

#### BUSINESS OPPORTUNITIES

WEEKLY NEWSPAPER WANTED—Editor-manager now with daily will pay \$750 cash on "going" business in good location; balance secured by notes on property; must be place where hard work and good business judgment will be productive. Address No. 9143, care of Manufacturers Record.

FOR SALE—Modern Bottling Plant. Franchised as well as ginger ale and all flavors. Located in South, where soda water sells year around. Part cash and balance over period of years. Owner has other interests. Address No. 9145, care of Manufacturers Record, Baltimore, Md.

#### MOVING AHEAD

Parkersburg has worked out of the depression. Diversified industry did it. Locate your factory here at the gateway to the Central West and South.

BOARD OF COMMERCE,  
Parkersburg, West Virginia.

## FARM AND INDUSTRIAL SITES

**FOR SALE—FARM AND INDUSTRIAL SITES.** With River, Rail and Highway facilities; 20 miles above New Orleans. Inducements offered.

C. B. FERDON, Norco, La.

## WAREHOUSE

## FOR SALE OR FOR RENT OR LEASE

As A Whole Or Part

4 Acres on the King's Highway (Gosport Road), Portsmouth, Va., with Belt Line Railroad connection—800 feet private side track, large sheds and warehouse all fenced, suitable for indoor or outdoor storage.

McEWEN LUMBER COMPANY,  
High Point, N. C.

## INDUSTRIAL PLANTS

**FOR SALE OR LEASE—**Well equipped plant for the manufacture of furniture or furniture dimension. Located in the lumber producing section with favorable freight rates to all markets.

P. O. Box No. 22, Macon, Ga.

## PATENT ATTORNEYS

**PATENTS—**Booklet free. Highest references. Best results. Promptness assured. WATSON E. COLEMAN, Patent Lawyer, 724 Ninth St., N. W., Washington, D. C.

**FREE "PATENT PARTICULARS"** Sterling Buck, over 25 years Registered Patent Attorney. Prompt and thorough services. Suite M 629 F, Washington, D. C.

**PAUL B. EATON, Patent Attorney** 1408-R Johnston Bldg., Charlotte, N. C. 914 Munsey Building, Washington, D. C. 417 Wachovia Bldg., Winston-Salem, N. C.

**SEYMORE & BRIGHT, Registered Patent Attorneys.** Established 1876. PATENTS, TRADEMARKS, COPYRIGHTS. Prompt and thorough service. Suite 892, National Press Building, Washington, D. C.

## PATENT ATTORNEYS

**WRITE FOR FREE PAPERS,** or send sketch or model and description of your invention, and I will send you information showing how to proceed to obtain a PATENT. No charge for this advice. M. H. FORD, registered patent attorney, 225 Broadway, New York, N. Y.

## SITUATIONS WANTED

**SALES MANAGER—**Open for position January 1st. Experienced in all departments of business. Best fitted for sales and distribution. Capable of aiding in design, production and advertising problems. Connection with growing organization marketing new products preferred. Address No. 9146, care of Manufacturers Record.

## REPRESENTATIVES WANTED

**MEN WANTED** to represent large manufacturers locally. Experience in industrial field preferred or having successfully operated own business. Earnings substantial. permanent connection. For interview write UNION PRODUCTS COMPANY, Station A, Cleveland, Ohio.

**MEN WANTED** who sell fire appliances, to handle a Gasoline Non-Explosive safety valve for use on all gasoline tanks and a line of one and five gallon Non-Explosive gasoline cans.

EMERSON ENGINEERING CORP., Alexandria, Va.

## MEN WANTED

**EXECUTIVES—**If you are capable of earning \$5000 or more, write us at once. Our personal and confidential service quickly locates suitable openings. If you can qualify for responsible position, write today for complete details. M. E. HILL, 310 Commerce Building, Nashville, Tenn.

## MEN WANTED

**HIGH-GRADE MEN —**Manufacturing, Sales, Technical, Office. Confidential, individual and effective Employment Service. Write for details. Established 1915. THE NATIONAL BUSINESS BOURSE, Great Northern Bldg., Chicago, Illinois.

**IF YOU ARE OPEN** to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service of recognized standards and reputation, through which preliminaries are negotiated confidentially for positions of the caliber indicated. The procedure is individualized to each client's personal requirements, your identity covered and present position protected. Established twenty-one years. Send only name and address for details.

R. W. BIXBY, INC.,  
103 Downtown Bldg., Buffalo, New York

## FOUNDRIES

**STEEL CASTINGS**  
Rough or Machined.  
W. W. PETTIS COMPANY,  
Cincinnati, Ohio.

**ALABAMA**  
Rudisill Foundry Company,  
Anniston  
Gray Iron Castings, Whiteway Standards, Mastarms, Soil Pipe and Fittings, Pressure Pipe Fittings, Manhole Frames and Covers.

## AIRWAY BEACON LIGHTS

**FOR SALE—**Will sell at great sacrifice two Airway Beacon lights, one revolving and one directional. Address SHERATON HOTEL, High Point, N. C.

## MACHINERY AND SUPPLIES

**FOR SALE**  
2 white way posts, 3 lights each.  
1 house elevator, perfect condition.  
Mrs. S. H. Rumph, Marshallville, Ga.

## RESALE DEPARTMENT

## MACHINERY

## EQUIPMENT

## SUPPLIES

**SATISFACTION**  
ALBERT PIPE SUPPLY CO., INC.  
NEW-RECLAIMED-USED  
**PIPE**  
ALL SIZES CUT TO SKETCH  
AND STOCKED  
BERRY & NORTH 13<sup>th</sup> STS.  
BROOKLYN, N.Y.  
GUARANTEED

**Second Hand  
and New  
Wrought Steel PIPE** Overhauled  
New Threads and Couplings  
Also Cut to Sketch

**Greenpoint Iron & Pipe Co., Inc.**  
187-205 Maspeth Ave. Brooklyn, N. Y.

**IRON AND STEEL PIPE**  
Large quantity new and used Government material in excellent condition, ready for immediate shipment. Low prices.

**CENTRAL PIPE & SUPPLY CO.**  
Box 1099  
Charleston, W. Va.

## PIPE

Rethreaded, reconditioned, guaranteed suitable for all practical purposes, furnished with new threads and couplings, 400,000 ft. in all sizes from 24" to  $\frac{1}{2}$ " diam.

5000 ft. 8" NEW GALVANIZED CORRUGATED pipe in lengths 16 to 20 ft. suitable for exhaust drains, water systems, sewers, conduits, etc., complete with necessary sleeves.

Very attractive prices.

**Marine Metal & Supply Co.**  
167 South Street, New York City

**IDLE  
MACHINERY**  
Can be  
Disposed of  
by  
Advertising  
it in the  
Manufacturers Record  
Baltimore, Md.

**STEEL TANK and TOWER**  
190,000 Gallon Water Tank & Tower. Dismantled, Marked, Ready for erection. Weight approx. 90 Tons—Perfect Condition—Texas location.

Arthur S. Partridge  
415 Pine St. St. Louis

**Plate Binding Roll**  
Hydraulic Wheel Press  
Niles Plate Bending Roll-Pyramid Type—Balancing Bar—Capacity  $\frac{1}{2}$  Plate 12" —Drop End Housing—Equipped with 50 HP A.C. Motor  
3 Phase—60 Cycles—220 Volts.  
300 Ton Niles Hydraulic Wheel Press. 48" Between Tie-Bars.

ARTHUR S. PARTRIDGE  
ST. LOUIS—415 PINE STREET.

**PIPE NEW  
SECOND HAND**  
Overhauled and Tested  
New Threads and Couplings  
Established 1904

**Albert & Davidson  
Pipe Corp.**  
Second Ave., 50th-51st St., Brooklyn, N. Y.  
Telephone SUNset 1900

**FOR SALE—Machinery and Equipment**  
formerly used by the  
**Long Fibre Textile Corporation**  
Roanoke, Virginia  
*consisting of*

1 Sargent & Sons wool and cotton washing and drying machine.  
10 sets of single carding machines.  
4 sets of double carding machines.  
Also pickers, chemical vats and other small tools.  
This machinery can be used for Ramie grass, cotton or wool. All equipment is installed, ready for operation.

*For further information write the*

**Eureka Investment Corporation**  
Box 974, Roanoke, Va.

**PLATE SHOP TOOLS**  
No. 4—36" Hilles & Jones punch, belt drive, cap. 1 $\frac{1}{4}$ "x1".  
No. 3—24" Southwark punch, motor drive, cap.  $\frac{3}{4}$ "x $\frac{3}{4}$ ".  
No. 1 $\frac{1}{2}$ —21" Hilles & Jones punch, motor drive cap. 1" x  $\frac{1}{2}$ ".  
No. 000—3" Hilles & Jones punch, belt drive cap.  $\frac{3}{4}$ "x $\frac{3}{4}$ ".  
No. 1C—New Doty comb, punch and shear, belt drive cap. 1" x  $\frac{1}{2}$ ".  
No. 52—Beloit comb, punch and shear, belt drive cap.  $\frac{1}{2}$ " x  $\frac{1}{2}$ ".  
Niles Plate splitting shear cap. 1" plate.  
No. 14" Espen Lucas column facing machine motor drive.

**O'BRIEN**  
**Machinery Company**  
113 N. Third St. Philadelphia

## —TRANSFORMERS— SALES AND REPAIR SERVICE

*Quick Delivery and Low Prices*

A complete stock of transformers 1 to 1000 kva. Modern methods make our repair service second to none. Special service on breakdown jobs.

*All transformers guaranteed for one year.  
Write for Catalog. No. 125-E.*

**The Electric Service Company, Inc.**  
"America's Used Transformer Clearing House"  
212 Walnut St., Cincinnati, Ohio



## *The* Resale Department

offers a market to dispose of used equipment. What it has done for others can be done for you.

*Let us tell you more about it*  
**Manufacturers Record**  
Baltimore, Md.



## RAILROAD AND CONTRACTORS' EQUIPMENT



### Shovels or Cranes

#### FOR SALE

- 1—Factory rebuilt Lima 1 $\frac{1}{4}$  cu. yd. capacity. This machine can be equipped with either shovel, clamshell, dragline or drag shovel attachments. Very reasonably priced. Carries new machine guarantee. Located at Newark, N. J.
- 1—GENERAL  $\frac{1}{2}$ -yd. combination shovel, backhoe, 2 buckets, and crane boom. Very good condition, located Long Island.
- 1—GA-2 Erie Gas Air Shovel. Fine condition and bargain. Located Newark, N. J.
- 1—Complete Shovel Attachment for Type "O" Thew. Also, attachment for Type B and B-2 Eries located in New Jersey. Decided bargains.
- 1—P & H 1 $\frac{1}{4}$  yd. Gas Shovel. Excellent condition, very attractive price. Located Newark, N. J.
- 1—Lima Tractor, 6 yd. capacity, with Waukesha Motor. Machine in very good condition. Priced to sell quickly. Located New York State.
- 1—Koehring  $\frac{1}{2}$  yd. Shovel. Excellent condition throughout. Located Newark, N. J.

### LIMA EXCAVATOR SALES AGENCY

Lima, O., Office: *Eastern Office and Warehouse, Lima Trust Bldg. 317 Frelinghuysen Ave., Newark, N. J. Tel. Waverly 2-0640*

Wire or phone nearest office at our expense

### STEEL SHEET PILING

#### NEW and USED

Rented — Sold — Bought

Stocks at principal points.

#### HYMAN-MICHAELS COMPANY

St. Louis      CHICAGO      New York  
Houston      San Francisco      Seattle

#### FOR SALE

5 New Champion  $\frac{1}{2}$ -yd. Power Shovels and Draglines.

Philips and Davies, Inc.  
Kenton, Ohio.

### RELAYING RAILS—SWITCHES TRACK MATERIAL

THE PERRY BUXTON DOANE CO.

P. O. Box 5253      Boston, Mass.

### 36" PORTABLE TRACK

25 lb. rails—7 steel ties per 15 ft. section. Over ten miles, located Ocala, Fla. Also locomotives, cars, cranes and shovels.

Write us or have your local dealer do so.  
EQUIPMENT CORPORATION OF AMERICA  
1168 So. Wabash Ave., Chicago

### BIG TANKS

We offer at downright giveaway prices the following gasoline storage tanks, practically new:

- 1—4,000 barrel capacity
- 1—5,000 barrel capacity
- 4—10,000 barrel capacity
- 7—25,000 barrel capacity
- 11—55,000 barrel capacity

W. M. Smith & Company  
P. O. BOX 1709  
BIRMINGHAM, ALA.

### Your ADVERTISEMENT

in these pages places your facilities before the leaders in manufacturing and industrial operations in the South and Southwest, creating wider markets for your products.

*Advertising rates gladly submitted upon request*  
**MANUFACTURERS RECORD**  
Baltimore      Maryland

# ENDLESS USES

DRIVING PILES on the Duwamish River near Seattle with a "Caterpillar" Thirty—pulling old railroad ties—laying underground cable without stopping to dig a trench—carving mountainside fire-breaks—the owner of a "Caterpillar" keeps his tractor busy at all sorts of money-making jobs.



Prices—f. o. b. Peoria, Illinois

TEN . . . . .	\$1100	TWENTY . . . . .	\$1900
FIFTEEN . . . . .	\$1450	THIRTY . . . . .	\$2375
SIXTY . . . . .	\$4175		

# CATERPILLAR

REG. U. S. PAT. OFF.

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.  
 Track-type Tractors      Combines      Road Machinery  
*(There's a "Caterpillar" Dealer Near You)*

# TRACTOR

## FLORIDA Uses this Modern Road Protection—



Approaches to the Caloosahatchee River Bridge, Road No. 5, Lee County, Florida, are protected by Robertson Chain Link Guard, painted white.

W. F. ROBERTSON STEEL & IRON COMPANY

::

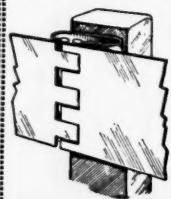
77 Elm Street, CINCINNATI, OHIO

### ROBERTSON CHAIN LINK GUARD

2" Mesh No. 6 Gauge—3" Mesh No. 4 Gauge  
For utmost protection, use this perfected guard. It is extra strong—flexible—resilient—shock-proof—low in cost. That is why it is specified by road builders and highway departments all over the country. Made of special quality copper bearing steel wire, hot-dipped galvanized after weaving, painted white if desired.

Complete details and prices of ROBERTSON'S Chain Link Fencing and Road Guards sent on request. Write or wire.

### Absorbs the Severest Shocks



The Resiliflex Guard Rail consists of broad galvanized plates, ends interlocking and supported under heavy tension by galvanized steel springs attached to posts.

The interlocking joint assists in absorbing the severest shocks and insures a continuous structure for guarding traffic.

Literature describing in detail the many advantages of Resiliflex Road Guards is yours for the asking.

National Traffic Guard Co.  
215 Moreland Ave., N. E. ATLANTA, GA.



Manufacturers of Rails, Frogs, Switches, for Permanent and Portable Track. Complete line of Steel Posts for Fence and other purposes.

Catalog will be sent on request

SWEET'S STEEL COMPANY  
MANUFACTURERS  
WILLIAMSPORT PENNA.

**BUCYRUS  
ERIE**

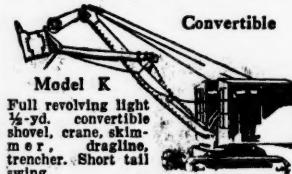
**BUCYRUS  
MONIGHAN**  
WALKING  
DRAGLINE  
EXCAVATORS

SHOVELS  
CRANES  
DRAGLINES  
DREDGES

### Reliability!

Bucyrus-Erie are cutting costs in every part of the world. All sizes, types and powers of excavators. Railway cranes and "Loadmaster."

Bucyrus-Erie Co.  
South Milwaukee, Wisconsin



Model K  
Full revolving light  
1/4-yd. convertible  
shovel, crane, skimmer,  
dragline, trencher. Short tall  
swing.

POWER SHOVELS  
CRANES, DRAGLINES  
TRENCH HOES  
1/4 yd. to 1 yd. capacity  
Full or part circle  
BAY CITY SHOVELS, Inc.  
Bay City, Mich.

### INDUSTRIAL CAR EQUIPMENT



THE ATLAS CAR & MANUFACTURING CO.  
Cleveland, Ohio

### BOTTOM DUMPING and TURN-OVER BUCKETS

Write us for information on  
Contractors Buckets

G. L. Stuebner Iron Works, Inc.  
Manufacturers of Material Handling Equipment  
So. Hancock St. Long Island City, N. Y.

### LARGEST PLANT

Filling,  
Land Reclamation,  
Canals  
and Port Work

River and Harbor Improvements,  
Deep Waterways  
and Ship Channels.

Correspondence Invited  
from Southern Officials  
and Corporate and Private  
Interests Everywhere.

NEW YORK  
21 Park Row

### DREDGING



### LONGEST EXPERIENCE

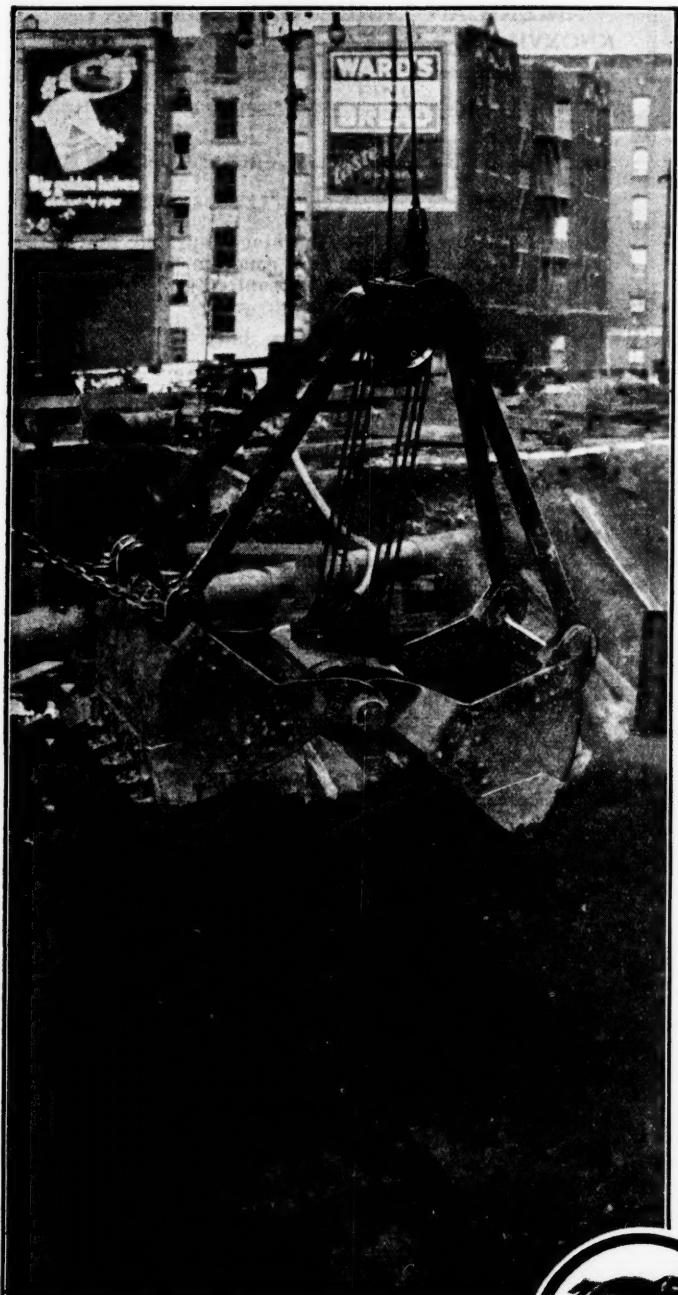
We are especially  
equipped to execute all kinds of  
dredging, reclamation and port  
works in Southern waters.

CONTRACTORS  
TO THE  
FEDERAL GOVERNMENT

HOUSTON  
Scanlan Bldg.

Atlantic, Gulf and Pacific Company

# "PAYING PRACTICAL DIVIDENDS IN STEADY ALL-AROUND SERVICE"



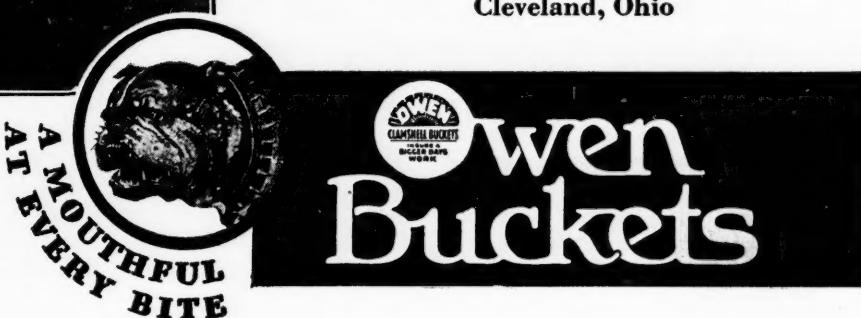
• • • • *that's why*  
**EVERY OWEN BUCKET  
PROVES A MONEY-  
MAKING INVESTMENT**

Owen Buckets are rugged, day-after-day dependables. No matter what the conditions—no matter how difficult the material—or how big the job, Owen Buckets make good any and every time they are put to work. That means—in user's language—they pay a profit in actual work accomplished.

It's because Owen Buckets are constructed with the many demands of clamshell bucket jobs well in mind. Not for a too limited service—not over-specialized. It's the general all-around efficiency that assures the money-making value in every Owen—that never-failing ability to "do a bigger day's work than any other bucket of the same weight and capacity."

Write us for facts on how and where Owens are turning time into dollars saved. We'll also send literature that will show you some worthwhile bucket construction features.

The Owen Bucket Co., 6015 Breakwater Ave.,  
Cleveland, Ohio



*We produce in quantities to meet your requirements*

## SAND and WASHED GRAVEL

QUICK shipments by rail from Baltimore and North East, Md. or in scow and barge lots. Truck or rail shipments from Baltimore, Md.

### The Arundel Corporation

MAIN OFFICE: ARUNDEL BUILDING  
BALTIMORE, MARYLAND

Branches: New York, Norfolk and Miami



for economy and permanence in Road Building and General Construction

WOODSTOCK SLAG CORP.

Southern Railway Bldg., Birmingham, Ala.

### SAND—GRAVEL—BRICK FILTER GRAVEL

Washed Sand and Gravel for Concrete Roads and Buildings  
Filter Gravel, all sizes—Building Bricks

FRIEND & CO., INC. River St., Petersburg, Va.

Crushed Stone  
Mascot Chatts Roofing Gravel  
Asphaltic Roadway Gravel  
Asphalt Filler Dust



AMERICAN LIMESTONE COMPANY  
KNOXVILLE TENNESSEE

## CRUSHED LIMESTONE Best for All Purposes

We manufacture all sizes of stone suitable for all classes of road building and concrete work where only a high-grade limestone is required.

Quarries opened up in 1912.

Capacity 8000 tons daily.

### Four Quarries

Blue Ridge, Va. Pembroke, Va. Pounding Mill, Va.  
Boxley, Greensville County, Va.

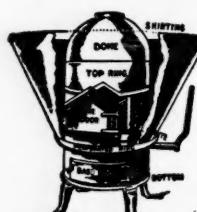
W. W. BOXLEY & COMPANY

Room 711, Boxley Building, - ROANOKE, VA.

## SAND DRYERS

(With or without External Gratings)

A portable machine, daily capacity 5 to 7 tons.



This dryer has a low first cost, is easily and cheaply operated and guaranteed dry sand.

The low cost makes it valuable for companies needing dry sand on two or more jobs at the same time, thereby eliminating the handling cost of one point only.

Write for descriptive pamphlet

Ripley, Ohio

For Contractors, Railroads,  
Trolley Lines, Coal Companies,  
Industrial Plants,  
Foundries.

## ASPHALT PLANTS

THE SIMPLICITY SYSTEM COMPANY

CHATTANOOGA, TENNESSEE

IF YOU WANT TO GET—  
Southern Business  
Advertise in the  
MANUFACTURERS RECORD

## Prompt Shipment of Sand and Gravel from this Plant

Capacity two tons a minute day and night.  
Plant served by five railroads. Located

within switching distance of Augusta, Ga.  
Send us your specifications.

Georgia Sand & Gravel Co.

E. W. Hancock, Pres.

Box 273

Augusta, Ga.

Phone 1932



# Illinois Resurfaces 63 $\frac{2}{3}$ MILES WITH BRICK



(Above) Completed brick resurfacing of worn concrete by Illinois State Highway Department on Route 4 south of Springfield. This gives the highest type highway at low cost.

(Inset) Worn slab being prepared for curb and brick resurfacing.

Photos by courtesy of Division of Highways, State of Illinois

ILLINOIS began a brilliant chapter in highway economy this year, by widening and resurfacing worn concrete roads with brick.

A total of 63.23 miles constituted the initial program.

Thus, slabs that have not too far approached the end of their usefulness are being saved for many years to come. Brick pavements built 30 and 40 years ago are in constant use today, although not nearly so well constructed as these Illinois brick resurfaced sections.

The economy and sound judgment in resurfacing with brick is apparent. The worn concrete—unsatisfactory as a pavement—will make a good base on a subgrade that has received its full settlement. Mastic cushion and bituminous filled brick surface prevent transmission of cracks. Weather and traffic will have no effect on the brick surface. The existing slab has been transformed into a low-maintenance road extraordinarily well suited to all traffic.

Highway engineers, officials and taxpayers will find much of interest in this Illinois work.

Further information on resurfacing with brick may be had by addressing the National Paving Brick Association, 1245 National Press Building, Washington, D. C.

## Cleveland Flaming Torches ... Popular from the Start!

The economy—the dependability—the full protection of the Cleveland Flaming Torch appeal to every contractor.

Trial orders prove so satisfactory that quantity orders for this unusual torch inevitably follow. You, too, will like Cleveland Flaming Torches. They give a full visible flame in all weather for as long as 48 hours. They stay where placed—are hard to tip over—can be hung up. Try them on your job.

THE CONSOLIDATED IRON-STEEL MFG. CO.  
1290 E. 53rd Street, Cleveland, Ohio



Some  
dealer  
territory  
available



### ONE CLEAR FACT

... Out of a tangle of claims about gasoline . . . one clear fact stands out . . .

### THAT GOOD GULF GASOLINE

is bought more places by more people in Gulf's 27 states because car owners buy on performance . . . the only fact that counts.

**GULF REFINING CO.**

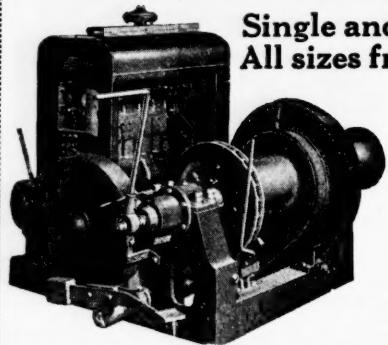
SULPHURIC ACID  
SUPERPHOSPHATE  
TRIPLE SUPERPHOSPHATE  
MANGANESE SULPHATE  
*Manufactured and Distributed by*  
THE DAVISON CHEMICAL CO.

Main Office, Baltimore Trust Bldg., Baltimore, Md.

Main Plant, Baltimore; Pyrites Deposits Cienfuegos District, Cuba; Phosphate Rock Plant, Southern Phosphate Corporation, Bartow, Florida.

Plants Handling Complete Fertilizers and Fertilizer Materials: Maryland 11; Virginia 9; Pennsylvania 10; Georgia 2; Ohio 2; North Carolina 11; South Carolina, Mississippi, Louisiana, Texas, Indiana, West Virginia, Tennessee, Connecticut and New Jersey 1 each.

DAKE HOISTS-Gasoline & Electric



DAKE Engine Company

Single and Double Drum  
All sizes from 2 to 27 h.p.

Are convenient, efficient, dependable and enduring. Rigid, sturdy construction insures lasting alignment. Interchangeable parts. Alemite lubrication. Low maintenance cost.

*Send for catalog  
and prices*

Grand Haven  
Michigan

LAND  
For Sale or Rent  
On EAST COAST of  
FLORIDA

*Small or large tracts*

For—Dairying

- Cattle Raising
- Truck Growing
- Citrus Fruits
- General Farming

*Let us know your requirements*

MODEL LAND COMPANY

*Flagler System*

St. Augustine—Florida

*The late Henry M. Flagler and his organizations have served  
Florida since 1886*



*The Southern Hotel*  
BALTIMORE

Something of The Old South clings to the Southern Hotel for all its up-to-the-moment fittings and appointments. Southerners particularly are quick to feel at home here because of this atmosphere. The best of foods prepared in true southern style complete its attractions.

Rate \$3.00 per day and up. Every room with bath or shower. Centrally located.

To the  
MANUFACTURER  
and DISTRIBUTOR

Abundant supplies of coal, coke, iron, timber and other raw materials lie in the regions of Georgia and Alabama, which are traversed by the

Central of Georgia  
Railway

Cheap electric power, numerous undeveloped water-powers, good home markets and excellent shipping facilities. Therefore, manufacturing conditions are ideal.

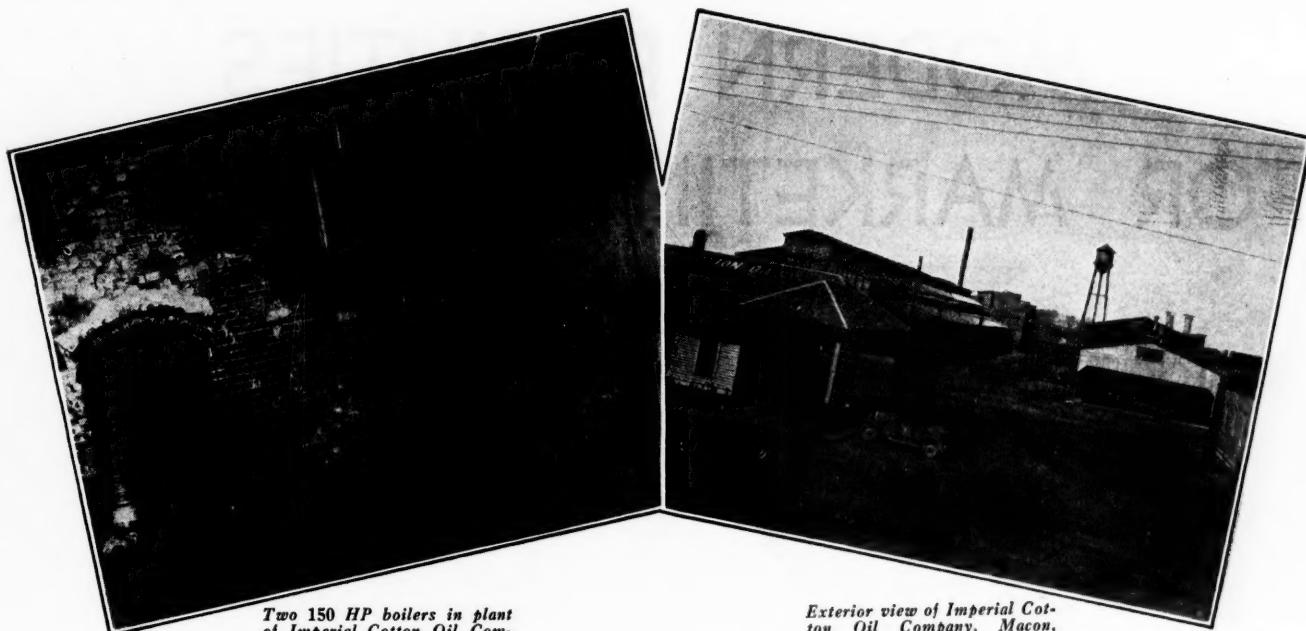
Many of the cities on the Central of Georgia Railway occupy advantageous positions for distributing warehouses, and a number of the larger northern and eastern manufacturers supply their southeastern trade from branch houses in these cities.

Full and detailed information upon application.

J. M. MALLORY, General Industrial Agent  
413 West Liberty St.  
SAVANNAH, GEORGIA

INDUSTRIAL SITES  
on and near the  
MISSISSIPPI RIVER  
served by I. C., M. O. P. and L. & N. Railways  
We sell our own holdings. For information write  
SOUTH MEMPHIS LAND COMPANY  
P. O. BOX 3054 MEMPHIS

IF YOU WANT TO GET—  
*Southern Business  
Advertise in the  
MANUFACTURERS RECORD*



Two 150 HP boilers in plant  
of Imperial Cotton Oil Com-  
pany, Macon, Mississippi.

Exterior view of Imperial Cot-  
ton Oil Company, Macon,  
Mississippi.

# Cotton Oil Plant Burns - Natural- GAS

The advantages of natural gas as a modern fuel are helping to develop the South just as it has other sections of the country. Here is shown a prominent cotton oil plant using natural gas in its boiler rooms.

Over 75% of the gas consumed in the United States today is natural gas. This modern, efficient fuel is now available in all but eleven states of the Union. It has played a big part in the development of the great industrial centers of the North and East. Now it is doing the same thing in the South.

Its high heat value, its ease of control (automatically or manually), its cleanliness and efficiency . . . all combine to make natural gas applicable to almost every industrial process.

*For more complete data on the application of natural gas to your factory operation or to heating your home, write to*



## SOUTHERN NATURAL GAS CORPORATION

WATTS BUILDING  
BIRMINGHAM, ALA.



# MODERN FACILITIES FOR MARKETING LIVESTOCK



THE great livestock markets of today and the good condition of thousands of animals that arrive daily are, to a great extent, a result of the practical study and dependable service provided by the American railways. Two factors are of major importance—speedy and safe transportation of livestock to market—and prompt movement of dressed meats to the great consuming areas.

In serving the livestock regions along its line, the Norfolk and Western Railway uses extraordinary care in providing adequate and proper equipment. Its rules—unlike those of unregulated forms of transportation—are rigid and are based upon the research work of both the federal government and the railway and upon the railway's wide experience in loading, feeding and resting in transit.

Norfolk and Western freight schedules are at all times dependable; connections must be met without fail when livestock moves. Over-

loading, in the slightest degree, is not permitted. The stockyards along the Norfolk and Western are commodious, are built for the comfort of the animals and are strategically located. Loading and re-loading are supervised with great care to insure against injury. Thus, shipments of livestock arrive on the markets in saleable condition. Furthermore, the livestock contract, under which all shipments are made, protects the shipper in far greater degree than if he shipped via any other mode of transportation.

The Norfolk and Western Railway has, approximately, 1,500 livestock cars in A-1 condition—strongly built with steel underframes and designed to provide a maximum of light, air and comfort for animals enroute. Powerful locomotives, heavy steel rail laid on a well-ballasted roadbed and a complete system of automatic electric signals insure your livestock getting to market "on time."

*Freight Traffic Department representatives of the Norfolk and Western Railway in important centers throughout the nation, from New York to San Francisco, will welcome an opportunity to inform you as to the railway's modern facilities and services.*

**NORFOLK AND WESTERN RAILWAY**  
ROANOKE, VIRGINIA

« « « S P E E D Y O U R G O O D S T H R U G A L V E S T O N » » »

# Texas' Oldest Port

## is America's Most Efficient . . .

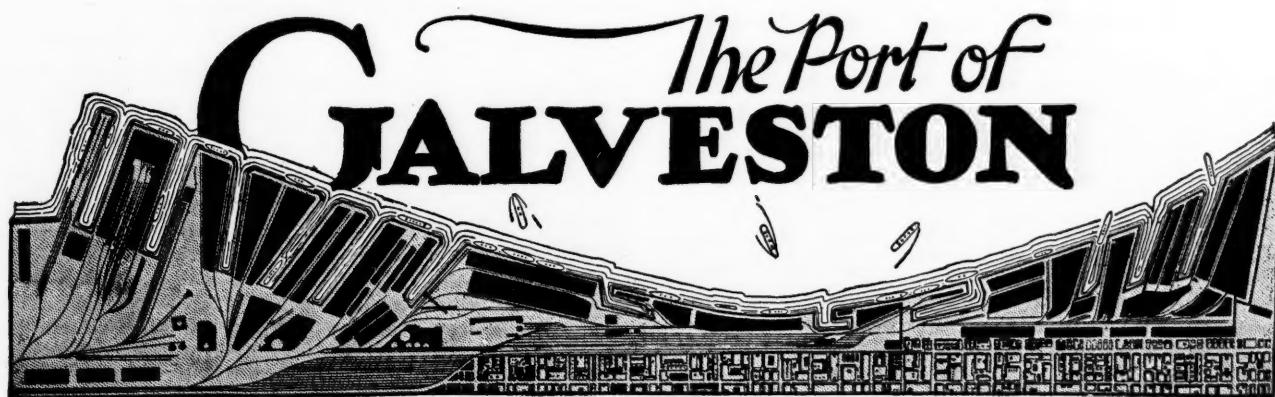
THE PORT OF GALVESTON is designed and operated in a manner to clip hours—even days—from transportation time. Galveston is an island, on the open sea. It is America's port of quickest dispatch.

Five of the nation's largest trunk lines feed traffic to 69 steamship lines. Rail lines fringe the outskirts and do not pass through the city. Only one switch from yards to wharves. Shipments arriving by nine are aboard ship by noon. No congestion—

berthing space for 100 ships at 32 waterfront warehouses.

Galveston's loading and unloading records are unequalled. All service units are co-ordinated, functioning under a single management. Back of the port is a century of experience.

Let us put your name on the mailing list for "Shippers Digest of Galveston," containing steamer schedules. Galveston Chamber of Commerce or Galveston Wharf Company, Galveston, Texas.



## Classified Index for Buyers

### ABRASIVE MATERIALS.

Carborundum Co., Niagara Falls, N. Y.

### ACCOUNTANTS (Cert. and Cost.)

Audit Company of the South, Atlanta, Ga.  
Ernst & Ernst, New York, N. Y.

### AERIAL TOWERS.

LeBourg, A., Gadsden, Ala.

### AIR COMPRESSORS (Stationary and Portable.)

Armstrong & Bro. Co., R. S., Atlanta, Ga.  
De Laval Steam Turbine Co., Trenton, N. J.  
General Electric Co., Schenectady, N. Y.  
Westinghouse Traction Brake Co., Wilmerding, Pa.

### AIR CONDITIONING SYSTEMS.

Niagara Blower Co., New York, N. Y.

### AIR HEATERS.

Babcock & Wilcox Co., New York.

### AIRLOCKS.

Aico Products, Inc., New York, N. Y.

### ANGLE IRON-WORKING MACHINERY.

Whitney Metal Tool Co., Rockford, Ill.

### APPRAISERS.

Main, Inc., Chas. T., Boston, Mass.

### ARCHITECTS.

Chase, Wm. J. J., Atlanta.  
Main, Inc., Chas. T., Boston, Mass.  
Milburn, Heister & Co., Wash., D. C.  
Moyer Co., Tilghman, Allentown, Pa.  
Preacher & Co., Inc., G. Lloyd, Atlanta.  
Surrine & Co., J. E., Greenville, S. C.

### ARCHITECTS' SUPPLIES.

Weber Co., Inc., F., Philadelphia, Pa.

### ARCHITECTURAL IRON WORK.

Dietrich Brothers, Baltimore, Md.  
Virginia Bridge & Iron Co., Roanoke, Va.

### ASPHALT.

Gulf Refining Co., Pittsburgh, Pa.

### —Filler.

American Limestone Co., Knoxville, Tenn.

### —Paving.

Barber Asphalt Co., Philadelphia, Pa.

### —Plants.

Simplicity System Co., Chattanooga, Tenn.

### AUDITORS.

Ernst & Ernst, New York, N. Y.

### BALLAST (Railroad.)

American Limestone Co., Knoxville, Tenn.

### BANKS and TRUST COMPANIES.

Baltimore Commercial Bank, Balt., Md.  
Baltimore Trust Co., Baltimore, Md.  
Bank of New York & Trust Co., New York City.  
First and Merchants National Bank, Richmond, Va.  
Provident Savings Bank & Trust Co., Cincinnati, Ohio.

### BARGES (Steel.)

American Bridge Co., New York, N. Y.

McClinic-Marshall Co., Pittsburgh, Pa.

### BARS (Steel, Rounds, Flats, Hexagon and Squares.)

Carnegie Steel Co., Pittsburgh, Pa.

Gulf States Steel Co., Birmingham, Ala.

Inggalls Iron Works Co., Birmingham.

Sweet's Steel Corp., Williamsport, Pa.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

Timken Roller Bearing Co., Canton, O.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Youngstown Sheet & Tube Co., Youngstown, Ohio.

### BATTERIES (Storage.)

Electric Storage Battery Co., Phila., Pa.

### BEAMS, CHANNELS, ANGLES.

Belmont Iron Works, Philadelphia, Pa.

Carnegie Steel Co., Pittsburgh, Pa.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Inggalls Iron Works Co., Birmingham.

Jones & Laughlin Steel Corp., Pittsburgh, Pa.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

Virginia Bridge & Iron Co., Roanoke, Va.

### BEARINGS (Anti-friction.)

Timken Roller Bearing Co., Canton, Ohio.

### —(Roller.)

Timken Roller Bearing Co., Canton, Ohio.

### BELT (Chain.)

Diamond Chain & Mfg. Co., Indianapolis.

### —(Leather, Canvas, Rubber.)

Charlotte Leather Belting Co., Charlotte, N. C.

### —Dressing.

Charlotte Leather Belting Co., Charlotte, N. C.

### —Fasteners.

Flexible Steel Lacing Co., Chicago, Ill.

### —Lacing (Steel Hinges.)

Flexible Steel Lacing Co., Chicago, Ill.

### BILLETS (Basic Open Hearth.)

Gulf States Steel Co., Birmingham, Ala.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

### BINS (Steel Loading.)

Blaw-Knox Co., Pittsburgh, Pa.

### BLASTING POWDER and Accessories.

Du Pont de Nemours & Co., E. L., Wilmington, Del.

### BLINDS (Venetian and Awning.)

Wilson Corp., The J. G., New York.

### BOILER REPAIRS.

Finnigan Co., Inc., J. J., Atlanta, Ga.

### BOILERS (New.)

Babcock & Wilcox Co., The, New York.

Charleston Dry Dock & Machine Co., Charleston, S. C.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Inggalls Iron Works Co., Birmingham.

McClinic-Marshall Co., Pittsburgh, Pa.

Roanoke Iron & Bridge Works, Roanoke, Va.

Virginia Bridge & Iron Co., Roanoke, Va.

### BRONZE (Architectural.)

Cincinnati Mfg. Co., Cincinnati, O.

Heath Company, J. S., Waukegan, Ill.

### BUBBLERS.

Bundle-Spence Mfg. Co., Milwaukee, Wis.

### BUCKETS (Clam Shell.)

Blaw-Knox Co., Pittsburgh, Pa.

Owen Bucket Co., The, Cleveland, Ohio.

Williams Company, G. H., Erie, Pa.

### —(Coal.)

Owen Bucket Co., Cleveland, O.

### —(Dredging, Excavating, Sewer, etc.)

Owen Bucket Co., The, Cleveland, Ohio.

Stuebner Iron Works, G. L., Long Island City, N. Y.

Williams Company, G. H., Erie, Pa.

### —(Elevator.)

Hendrick Mfg. Co., Carbondale, Pa.

### —(Material Handling.)

Owen Bucket Co., Cleveland, O.

### —(Ore Handling.)

Owen Bucket Co., The, Cleveland, Ohio.

Stuebner Iron Works, G. L., Long Island City, N. Y.

### —(Rehandling.)

Owen Bucket Co., Cleveland, O.

### —(Sand and Gravel.)

Owen Bucket Co., Cleveland, O.

Williams Company, G. H., Erie, Pa.

### BOLTS, Rivets, Studs, Washers.

Bethlehem Steel Co., Bethlehem, Pa.

Oliver Iron & Steel Corp., Pittsburgh, Pa.

Progressive Mfg. Co., Torrington, Conn.

Russell, Burdsall & Ward Bolt & Nut Co., Port Chester, N. Y.

Virginia Bridge & Iron Co., Roanoke, Va.

—(Track.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

Sweet's Steel Co., Williamsport, Pa.

—(Welded.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Welded.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wire.)

Timken Roller Bearing Co., Canton, O.

Virginia Bridge & Iron Co., Roanoke, Va.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

**ELECTRIC STEEL CASTINGS**  
Weighing from 1 lb. to 500 lbs. each  
Quality Production A Specialty  
Nickel, Chrome and Other Alloy  
Quick Delivery  
Inquiries Solicited  
**CRUCIBLE STEEL CASTING COMPANY**  
LANSDOWNE, DELAWARE COUNTY, PA.

**HIGH GRADE GRAY IRON & SEMI-STEEL CASTINGS**  
From one pound to ten thousand pounds.  
Careful attention to detail.  
Your requirements solicited, quick service.  
**JEFFERSON FOUNDRY COMPANY**  
Birmingham, Alabama  
P. O. Box 147 Phone 9-4850

WE MAKE A SPECIALTY OF  
**HIGH GRADE GREY IRON AND SEMI-STEEL CASTINGS**  
All Kinds of Machine Work. Special Machines Made to Order.  
Prices Will Suit You. Prompt Service.  
Salem Foundry & Machine Works Salem, Va.

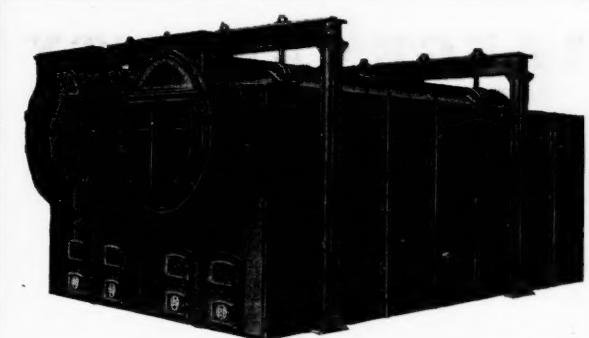
**The Cincinnati Steel Castings Co.**  
Electric Process  
OFFICE AND WORKS  
Spring Grove, Alabama and Bates Avenues  
Cincinnati, Ohio  
**ALLOY IRON & STEEL CASTINGS**

WE LOOK INTO THE EARTH  
By use of Diamond Core Drills  
We test foundations for buildings, bridges and  
dams. We prospect coal and mineral lands in any  
part of North and South America.  
**PENNSYLVANIA DRILLING CO.**  
1201-1215 Chartiers Avenue  
Pittsburgh (Elliott), Pa.  
**DRILLING CONTRACTORS**

**EARLE**  
The Earle Gear & Machine Co.  
4719 Stanton Avenue, Philadelphia, Pa.  
110 State St., Boston, Mass.  
95 Liberty St., New York City  
**GEARS**

**MOUNT AIRY GRANITE**  
THE NORTH CAROLINA GRANITE CORP'N.  
Mount Airy, N. C.

**PROGRESSIVE COMPANY**  
CANNING MACHINERY AND SUPPLIES  
FOR FRUIT, VEGETABLES, Sea Food, Etc.  
MANUFACTURERS OF  
CANNING CONDENSERS, CANNING  
MACHINERY, ETC.



**BOILERS**  
(Return Tubular)  
**STEEL CASINGS**  
**STACKS**      **BREECHINGS**  
**TANKS**  
for every purpose

**FABRICATED STEEL PLATES**  
Up to 3" Thick  
*Write For Prices*

**THE HEDGES WALSH WEIDNER CO.**  
Main Office and Works  
CHATTANOOGA, TENNESSEE  
Eastern Office: 200 Madison Ave., New York, N. Y.  
Subsidiary International Combustion Engineering Corporation

**TITUSVILLE**      **POWER AND HEATING BOILERS**  
THE  
TITUSVILLE  
IRON WORKS CO.  
TITUSVILLE, PENNA.      FOR ALL  
INDUSTRIAL REQUIREMENTS

Refractory Brickwork  
Small Incinerators      Insulation  
Furnace Linings  
Boiler Settings  
**The BROOKS-FISHER CO.**  
Atlanta      Dallas

**Angle Iron Notcher**      **Angle Iron Bender**  
No. 60      No. 61

**BALL BEARING**  
This Notcher and Bender has a Capacity of 3" x 3" x 3/8" Angle

*Write for Catalog and Price List on Entire Line*

**WHITNEY METAL TOOL COMPANY**  
117 FORBES STREET      ROCKFORD, ILL.

## LARGE CAPACITY RECRUSHERS



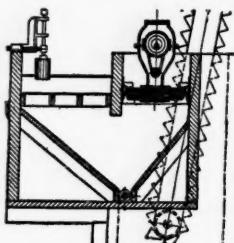
Designed for rejection work for use with primary crushers to increase the output of  $\frac{3}{4}$ " and finer materials.

Ideal for use in quarries, gravel pits, and also in large commercial plants where speedy and accurate control of the finished product is necessary to meet rigid specifications as to the percentage of different sizes allowed.

We manufacture 26 sizes of Crushers and 3 sizes of Pulverizers. We will assemble any combination outfit either stationary or portable and with or without power. Write for new catalogue today.

MANGANESE EQUIPPED CAPACITIES TO 450 TONS DAILY  
**UNIVERSAL CRUSHER CO.,** 627 C Ave. West  
 Cedar Rapids, Iowa  
 25 years of unexcelled service

### Coal Producers Make Money With ELMORE COAL JIGS



These Jigs clean your fine coal. Merchantable coal insures steady customers and assures profits.

This is a single compartment jig for both Anthracite and Bituminous coal. A dewatering bucket elevator is provided for removing the refuse from the jig tank. A screw conveyor removes the fines from the hutch of the jig to the boot of the elevator.

Write us for information and prices

Chas. C. Steward Machine Co.  
 P. O. Drawer 1191, Birmingham, Ala.

**BRICK—CHIMNEYS—CONCRETE  
 BOILER BRICKWORK**  
**The Rust Engineering Co.**  
*Engineers and Contractors*  
**BIRMINGHAM, ALABAMA**  
**PITTSBURGH—WASHINGTON—NEW YORK—CHICAGO**



**SCHOOL DESKS**  
*John Andrew & Son*  
**CHICAGO**  
 107 So. Wabash Avenue

#### CHAINS (High Speed Roller.)

Diamond Chain & Mfg. Co., Indianapolis.

#### —(Silent Drive.)

Diamond Chain & Mfg. Co., Indianapolis.

#### CHAIRS (Opera and Theatre.)

Andrews Co., A. H. Chicago, Ill.

#### CHEMICALS.

Davison Chemical Co., Baltimore, Md.

Grasselli Chemical Co., Inc., Birmingham.

#### CHEMISTS, CHEMICAL ENGINEERS (Analytical.)

Froehling & Robertson, Inc., Richmond, Va.

Hunt Co., Robert W., Chicago, Ill.

Longdale Laboratories, Inc., Richmond, Va.

Melpa, Bassett & Slaughter, Phila., Pa.

Moss, Jr., W. Wade, Columbus, Ga.

Picard Laboratories, Birmingham, Ala.

Pittsburgh Testing Laboratories, Pittsburgh, Pa.

Southwestern Laboratories, Fort Worth, Tex.

Stillman & Van Sien, New York.

#### —(Consulting, Paper Industry.)

Froehling & Robertson, Inc., Richmond, Va.

#### CHIMNEYS (Concrete.)

Bust Engineering Co., Birmingham, Ala.

#### —(Radial Brick.)

Bust Engineering Co., Birmingham, Ala.

#### CHLORIDE ACCUMULATOR.

Electric Storage Battery Co., Phila., Pa.

#### CHUTES (Mail.)

Cutter Mail Chute Co., Rochester, N. Y.

#### CLUTCHES (Friction.)

Caldwell Co., Inc., W. E., Louisville, Ky.

#### COAL (Bituminous.)

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

#### —and Ash-Handling Machy.

Northwest Engineering Co., Chicago.

#### —Jigs.

Steward Machine Co., Chas. C., Birmingham, Ala.

#### —Tipples.

American Bridge Co., New York, N. Y.

Virginia Bridge & Iron Co., Roanoke, Va.

#### —Washers.

Steward Machine Co., Chas. C., Birmingham, Ala.

#### COCKS (Service.)

Marco Nordstrom Valve Co., San Francisco, Calif.

#### COKE.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

#### COLUMNS (Cast Iron.)

U. S. Pipe & Fdry. Co., Burlington, N.J.

#### CONCRETE Construction (Reinforced.)

Cement Gun Construction Co., Chicago.

Bust Engineering Co., Birmingham, Ala.

#### —Mixers.

Dunning & Boschert Press Co., Inc., Syracuse, N. Y.

#### CONDENSERS.

Manistee Iron Works Co., Manistee, Mich.

#### CONDUITS (Electric, Interior, Steel.)

Western Electric Co., New York, N. Y.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

#### CONTRACTORS (Bridge.)

Hardaway Contracting Co., Columbus, Ga.

Kansas City Bridge Co., Kansas City, Mo.

Snare Corp., Frederick, New York.

—(Drainage and Dredging.)

Arundel Corp., The, Baltimore, Md.

Atlantic Gulf and Pacific Co., New York.

#### —Drilling.

Kennedy-Bagger Drilling Co., New York City.

Mott Corp. Drilling Co., Huntington, W. Va.

Myers & Sons, J. L., Denton, Texas.

Pennsylvania Drilling Co., Pittsburgh, Pa.

Southern Drilling Co., Salvile, Va.

Sprague & Henwood, Inc., Scranton, Pa.

#### —(Electrical.)

Virginia Engineering Co., Inc., Newport News, Va.

Walker Electrical Co., Atlanta, Ga.

Warren Service Co., Knoxville, Tenn.

Webb Electric Co., Anderson, S. C.

#### —(Foundations and Dams.)

Snare Corp., Frederick, New York, N. Y.

#### —(General.)

Blair, Algernon, Montgomery, Ala.

Burke, Inc., J. V. & R. T., New Orleans.

Cornell Young Co., Inc., Macon, Ga.

Cowper Co., Inc., John W., Washington, D. C.

Flake-Carter Constr. Co., Greenville, S. C.

Smallman-MacQueen Construction Co., Birmingham.

Snare Corp., Frederick, New York, N. Y.

Tucker & Laxon, Charlotte, N. C.

White Engineering Corp., J. G., New York.

#### —(Industrial Buildings.)

Blair, Algernon, Montgomery, Ala.

Cowper Co., Inc., John W., Washington, D. C.

Flake-Carter Constr. Co., Greenville, S. C.

Lockwood Greene Engrs., Inc., Boston.

Smallman-MacQueen Construction Co., Birmingham.

Snare Corp., Frederick, New York, N. Y.

Tucker & Laxon, Charlotte, N. C.

Virginia Engineering Co., Inc., Newport News, Va.

#### —(Mill Village.)

Hornbuckle Contracting Co., Atlanta, Ga.

#### —(Power Piping.)

Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.

Poe Piping & Heating Co., Greenville, S. C.

Power Piping Co., Pittsburgh, Pa.

#### —(Power Plants.)

Snare Corp., Frederick, New York, N. Y.

Virginia Engineering Co., Inc., Newport News, Va.

#### —(Railroad.)

Cornell-Young Co., Inc., Macon, Ga.

#### —(Reinforced Concrete.)

Blair, Algernon, Montgomery, Ala.

Cement Gun Construction Co., Chicago.

Gunite Conc. & Constr. Co., Kansas City.

Tucker & Laxon, Charlotte, N. C.

#### —(Road and Street Paving.)

Flake-Carter Constr. Co., Greenville, S. C.

Hornbuckle Contracting Co., Atlanta, Ga.

McCrory Co., J. B., Atlanta, Ga.

Virginia Engineering Co., Inc., Newport News, Va.

#### —(Sewerage and Waterworks.)

Hardaway Contracting Co., Columbus, Ga.

Hornbuckle Contracting Co., Atlanta, Ga.

McCrory Co., The J. B., Atlanta, Ga.

Poe Piping & Heating Co., Greenville, S. C.

Virginia Engineering Co., Inc., Newport News, Va.

#### —(Sprinkler System.)

Poe Piping & Heating Co., Greenville, S. C.

#### —Machinery and Supplies.

##### (Used.)

Lima Excavator Sales Agency, Lima, Ohio.

Machinery Record, Richmond, Va.

Marine Metal & Supply Co., New York.

#### CONTRACT WORK WANTED.

(See following classifications.)

#### Castings.

#### Foundries and Machine Shops.

#### Machinery (Special.)

#### Ornamental Iron Work.

#### Patterns.

#### Sheet Metal Work.

#### Structural Steel and Iron.

#### CONVEYING AND ELEVATING MACHINERY.

Universal Crusher Co., Cedar Rapids, Ia.

#### COOLING AND HEATING UNITS (Fan.)

Niagara Blower Co., New York, N. Y.

#### COTTON GIN MACHINERY.

Continental Gin Co., Birmingham, Ala.

#### COUPLINGS.

Goldens' Fdy. & Mch. Co., Columbus, Ga.

#### (Flexible.)

Diamond Chain & Mfg. Co., Indianapolis, Ind.

**CLEANES.**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**(Cantilever, Gantry.)**  
Bedford Foundry & Machine Co., Bedford, Ind.

**(Crawler.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**(Crawling Tractor.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**(Electric Travelling.)**  
Bedford Foundry & Machine Co., Bedford, Ind.

**(Full Circle Steam and Electric.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**(Gasoline.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**(Locomotive.)**  
Bucyrus-Erie Co., So. Milwaukee, Wis.  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**(Material Handling.)**  
Bay City Shovels, Inc., Bay City, Mich.  
Industrial Brownhoist Corp., Cleveland, O.  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.  
Universal Crane Co., Lorain, Ohio.

**CRAWLERS (Tractor.)**  
Trackson Co., Milwaukee, Wis.

**CREOSOTED MATERIALS.**  
Amer. Creosote Wks., Inc., New Orleans.  
Atlantic Creosoting Co., Norfolk, Va.

**CREOSOTED TIMBER.**  
Ayer & Lord Tie Co., Chicago, Ill.  
Brown Wood Preserving Co., Louisville, Ky.

**CREOSOTE OIL.**  
Amer. Creosote Wks., Inc., New Orleans.  
Ayer & Lord Tie Co., Inc., Chicago.

**CREOSOTING (Wood Material.)**  
Amer. Creosote Wks., Inc., New Orleans.  
Amer. Creosoting Co., Inc., Louisville, Ky.  
Atlantic Creosoting Co., Norfolk, Va.  
Brown Wood Preserving Co., Louisville, Ky.  
Eppinger & Russell Co., New York, N. Y.  
Gulf States Creos. Co., Hattiesburg, Miss.

**CROSS-ARMS (Creosoted.)**  
Amer. Creosote Wks., Inc., New Orleans.  
Amer. Creosoting Co., Inc., Louisville, Ky.  
Atlantic Creosoting Co., Norfolk, Va.

**(Zinc Meta Arsenite Treated.)**  
Curtin-Hove Corp., New York, N. Y.

**CROSS-TIES (Creosoted.)**  
Amer. Creosote Wks., Inc., New Orleans.  
Amer. Creosoting Co., Inc., Louisville, Ky.  
Atlantic Creosoting Co., Norfolk, Va.  
Ayer & Lord Tie Co., Inc., Chicago.  
Eppinger & Russell Co., New York, N. Y.

**(Zinc Meta Arsenite Treated.)**  
Curtin-Hove Corp., New York, N. Y.

**CRUSHED STONE (Road Concrete and Ballast.)**  
American Limestone Co., Knoxville, Tenn.  
Baxley & Co., W. W., Roanoke, Va.

**CRUSHERS (Coal and Coke.)**  
Fuller Lehigh Co., Fullerton, Pa.  
Stewart Machine Co., Chas. C., Birmingham, Ala.

**(Rock.)**  
Gruendler Crusher & Pulverizer Co., St. Louis, Mo.  
Universal Crusher Co., Cedar Rapids, Ia.

**CRUSHING and Pulverizing Machinery.**  
Allis Chalmers Mfg. Co., Milwaukee, Wis.  
Fuller Lehigh Co., Fullerton, Pa.  
Gruendler Crusher & Pulverizer Co., St. Louis, Mo.  
Universal Crusher Co., Cedar Rapids, Ia.

**CULTIVATORS (Mechanical.)**  
Federal Farm Equipment Co., Jacksonville, Fla.

**CULVERT PIPE (Cast Iron.)**  
Amer. Cast Iron Pipe Co., Birmingham.  
Cast Iron Pipe Research Assn., Chicago.  
U. S. Pipe & Foundry Co., Burlington, N. J.

**(Corrugated Metal.)**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.

**CYLINDERS (Compressed Air, Gas.)**  
National Tube Co., Pittsburgh, Pa.

**(Creoseting.)**  
Aero Products, Inc., New York, N. Y.

**DESKS (School.)**  
Andrews Co., A. H., Chicago, Ill.

**DITCHING MACHINERY.**  
Bay City Shovels, Inc., Bay City, Mich.  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**DOORS (Fire.)**  
Merchant & Evans Co., Philadelphia, Pa.

**(Fireproof, Air Chamber.)**  
Wilson Corp., The J. G., New York.

**(Kalamein and Hollow Metal.)**  
Cincinnati Mfg. Co., Cincinnati, O.

**(Rolling, Steel and Wood.)**  
Wilson Corp., The J. G., New York.

**(Vault.)**  
York Safe & Lock Co., York, Penna.

**DRAFTSMEN'S SUPPLIES.**  
Weber Co., Inc., F., Philadelphia, Pa.

**DRAGLINE EXCAVATORS.**  
Bucyrus-Erie Co., So. Milwaukee, Wis.  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.  
Thew Shovel Co., The, Lorain, Ohio.

**DREDGES (Dipper, Elevator, Hydraulic.)**  
Bay City Shovels, Inc., Bay City, Mich.  
Bucyrus-Erie Co., So. Milwaukee, Wis.

**DREDGING (River and Harbor Improvement.)**  
Arundel Corp., The, Baltimore, Md.  
Atlantic Gulf and Pacific Co., New York.

**DRILLS (Oil and Artesian Well.)**  
Virginia Machinery & Well Co., Inc., Richmond, Va.

**DRINKING FOUNTAINS.**  
Bundt-Sponce Mfg. Co., Milwaukee, Wis.

**DROP-FORGING MACHINERY.**  
Bliss Co., E. W., Brooklyn, N. Y.

**DRYERS (Gravel and Sand.)**  
Ripley Fdy. & Mch. Co., Ripley, Ohio.

**DRYING MACHINERY.**  
Chicago Bridge & Iron Wks., Birmingham.

**DUSTPROOFING (Concrete.)**  
Sunbeam Sons, Inc., L., New York.

**DYNAMITE (Industrial and Agricultural.)**  
Du Pont De Nemours & Co., Inc., E. I. Wilmington, Del.

**ECONOMIZERS (Fuel.)**  
Babcock & Wilcox Co., New York.

**ECONOMISTS (Administrative.)**  
Brookmire Economic Service, New York.

**ELECTRICAL Instruments and Supplies.**  
General Electric Co., Schenectady, N. Y.  
Western Electric Co., New York City.

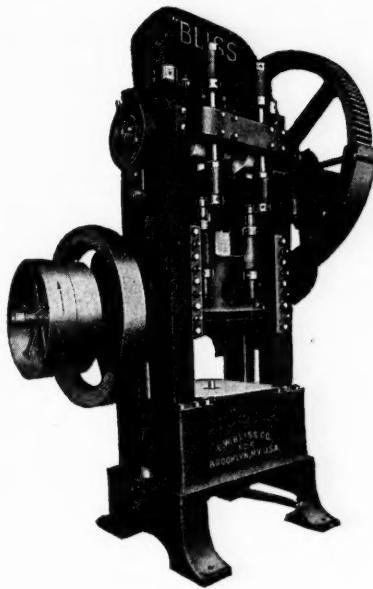
**Machinery (Generators, Motors, etc., New.)**  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Fairbanks, Morse & Co., Chicago, Ill.  
General Electric Co., Schenectady, N. Y.  
Partridge Arthur S., St. Louis, Mo.  
Rockford Power Machy. Co., Rockford, Ill.

**Machinery (Generators, Motors, etc., Used.)**  
Delta Equipment Co., Philadelphia, Pa.  
Electric Service Co., Cincinnati, Ohio.  
General Electric Co., Schenectady, N. Y.  
O'Brian Machinery Co., The, Phila., Pa.  
Reading Sngineering Wks., Reading, Pa.  
Rockford Power Machy. Co., Rockford, Ill.

**Machinery Repairing (Motors, Generators, etc.)**  
Electric Service Co., Cincinnati, Ohio.

# BLISS

For economy  
in sheet metal operations



## Straight Side Presses

Sheet metal automobile parts, heavy hardware, agricultural implements, tractors, electrical instruments, cutlery, etc., can be turned out with a high degree of precision and economy by the aid of Bliss Straight Side Presses. This type of press is also adapted to light embossing work and the trimming of hot or cold forgings.

The Bliss Straight Side Press is built in a wide variety of arrangements so as to meet given operating requirements exactly. It can be furnished with flywheel, single, double, or triple geared, single or twin drive, cut back or straight side frame, special slide width and length, etc.

There is a Bliss Press that meets *your* requirements exactly. Let us check your sheet metal operations and explain the advantages of Bliss equipment in your plant.

SINCE  
1857

## BLISS for MACHINERY

**E. W. BLISS CO., BROOKLYN, N. Y., U. S. A.**

**Factories:** Brooklyn, N. Y. Hastings, Mich. Salem, Ohio  
**Sales Offices:** Detroit Cleveland Chicago Boston Philadelphia  
Cincinnati New Haven Rochester

**Foreign Factories and Offices:** London, Eng. Turin, Italy Paris, France

**ELECTRIC LIGHTING.**  
Westinghouse Lamp Co., New York City.

**ELECTRIC SHOVELS (See Shovels.)**

**ELEVATORS (Electric.)**  
American Elevator & Machine Co., Inc., Louisville, Ky.  
Millner Co., St. Louis, Mo.

**(Hand and Belt Power.)**  
American Elevator & Machine Co., Inc., Louisville, Ky.  
Millner Co., St. Louis, Mo.

**(Hydraulic.)**  
American Elevator & Machine Co., Inc., Louisville, Ky.

**ENGINEERS (Airports.)**  
Lockwood Greene Engrs., Inc., New York.  
MacElwee & Crandall, Inc., Cambridge, Mass.

**(Appraisal.)**  
Lockwood Greene Engrs., Inc., New York.  
Main, Inc., Chas. T., Boston, Mass.  
Wadleigh & Bailey, Washington, D. C.  
White Engineering Corp., J. G., New York.

**(Bridge.)**  
Gardner & Howe, Memphis, Tenn.  
Greiner & Co., J. E., Baltimore, Md.  
Hardaway Contracting Co., Columbus, Ga.  
Hedrick, Inc., Ira G., Hot Springs, Nat'l. Park, Ark.

**(Chemical.)**  
Dow & Smith, New York, N. Y.  
Moss, Jr., W. Wade, Columbus, Ga.  
Picard Laboratories, Birmingham, Ala.  
Pittsburgh Testing Laboratories, Pittsburgh, Pa.

**(Civil.)**  
Gardner & Howe, Memphis, Tenn.  
Greiner & Co., J. E., Baltimore, Md.  
Harrub Engr. Co., C. N., Nashville, Tenn.  
Hedrick, Inc., Ira G., Hot Springs, Nat'l. Park, Ark.

**(Consulting.)**  
Barstow & Co., W. S., New York City.  
Converse & Co., J. B., Mobile, Ala.  
Cramer, Robert, Milwaukee, Wis.  
Engineering Service Corp., Houston, Tex.  
Goden, Joseph, Chicago, Ill.  
Hedrick, Inc., Ira G., Hot Springs, Nat'l. Park, Ark.

**(Cost.)**  
Ernst & Ernst, New York, N. Y.

**(Dams.)**  
Alpaugh & Sons, Chas. W., Manassas, Va.  
Barstow & Co., W. S., New York City.  
Bylesby Engineering and Management Corp., Chicago, Ill.

**(Drainage and Irrigation.)**  
Cramer, Robert, Milwaukee, Wis.  
Federal Farm Equipment Co., Jacksonville, Fla.

**(Efficiency.)**  
Ernst & Ernst, New York, N. Y.  
Whitman, Requardt & Smith, Balt., Md.

**(Electrical.)**  
Engineering Service Corp., Houston, Tex.  
Hoover Engineering Co., Chicago, Ill.  
Lee Engineering Corp., William S., Charlotte, N. C.  
Lockwood Greene Engrs., Inc., New York.  
Main, Inc., Chas. T., Boston, Mass.  
Tucker & Laxton, Charlotte, N. C.  
Webb Electric Co., Anderson, S. C.  
Wiley & Wilson, Lynchburg, Va.

**(Electric-Light and Power Plants.)**  
Barstow & Co., W. S., New York City.  
Bylesby Engineering and Management Corp., Chicago, Ill.

**(Farming.)**  
Cramer, Robert, Milwaukee, Wis.  
Hall, J. Henry, Lexington, Ky.  
Lee Engineering Corp., William S., Charlotte, N. C.

**(Gas.)**  
Bylesby Engineering and Management Corp., Chicago, Ill.  
Huey, S. E., Monroe, La.

**(Geological.)**  
Froehling & Robertson, Richmond, Va.  
Moss, Jr., W. Wade, Columbus, Ga.  
Wadleigh & Bailey, Washington, D. C.

**(Harbor Improvements.)**  
Engineering Service Corp., Houston, Tex.

**(Heating.)**  
Wiley & Wilson, Lynchburg, Va.

**(Hydraulic.)**  
Alpaugh & Sons, Chas. W., Manassas, Va.  
Main, Inc., Chas. T., Boston, Mass.  
Whitman, Requardt & Smith, Balt., Md.  
Wiedeman & Singleton, Inc., Atlanta, Ga.

**(Hydro-electric.)**  
Alpaugh & Sons, Chas. W., Manassas, Va.  
Barstow & Co., W. S., New York City.  
Bylesby Engineering & Management Corp., Chicago, Ill.

**(Industrial Plants.)**  
Barstow & Co., W. S., New York City.  
Conover, Older & Quinlan, Inc., Chicago.  
Converse & Co., J. B., Mobile, Ala.  
Gardner & Howe, Memphis, Tenn.

**(Inspection and Tests.)**  
Cramer, Robert, Milwaukee, Wis.  
Dow & Smith, New York, N. Y.  
Froehling & Robertson, Inc., Richmond, Va.

**(Investigation and Tests.)**  
Harrub Engr. Co., Robert W., Chicago, Ill.  
McCallum Inspection Co., Norfolk, Va.

**(Mechanical.)**  
Engineering Service Corp., Houston, Tex.  
Lee Engineering Corp., William S., Charlotte, N. C.

**(Mining. See Engineers, Geological.)**

**(Municipal.)**  
Conover, Older & Quinlan, Inc., Chicago.  
Dow & Smith, New York, N. Y.  
Harrub Engr. Co., C. N., Nashville, Tenn.

**(Paving and Roads.)**  
Dow & Smith, New York, N. Y.  
Harrub Engr. Co., C. N., Nashville, Tenn.

**(Printing and Newspaper Plants.)**  
Lockwood Greene Engrs., Inc., New York.

**(Public Service Properties.)**  
Barstow & Co., W. S., New York City.  
Bylesby Engineering & Management Corp., Chicago, Ill.

**(Railroad.)**  
Huey, S. E., Monroe, La.

**(Reinforced Concrete Bridges, Buildings, etc.)**  
Gardner & Howe, Memphis, Tenn.  
Greiner & Co., J. E., Baltimore, Md.

**(Sanitary.)**  
Cramer, Robert, Milwaukee, Wis.  
Whitman, Requardt & Smith, Balt., Md.

**(Sewerage and Waterworks.)**  
Conover, Older & Quinlan, Inc., Chicago.  
Hall, J. Henry, Lexington, Ky.

**(Sewage Disposal Plants.)**  
Cramer, Robert, Milwaukee, Wis.  
McCrory Co., The, J. B., Atlanta, Ga.  
Whitman, Requardt & Smith, Balt., Md.

**(Structural.)**  
Harrub Engr. Co., C. N., Nashville, Tenn.  
Hills and Youngberg, Jacksonville, Fla.

**(Textile Mills.)**  
Lockwood Greene Engrs., Inc., New York.  
Main, Inc., Chas. T., Boston, Mass.

**(Transmission Lines.)**  
Hoosier Engineering Co., Chicago, Ill.

**(Ventilating and Heating.)**  
Wiley & Wilson, Lynchburg, Va.

**(Water Supply.)**  
Whitman, Requardt & Smith, Balt., Md.

**ENGINES (Compressed Air.)**  
Dake Engine Co., Grand Haven, Mich.

**(Diesel Type.)**  
Fairbanks, Morse & Co., Chicago, Ill.  
Superior Engine Co., Springfield, O.

**(Gas and Gasoline.)**  
Sterling Engine Co., Buffalo, N. Y.

**(Marine.)**  
Fairbanks, Morse & Co., Chicago, Ill.

**(Oil.)**  
Continental Gin Co., Birmingham, Ala.

**(Steam.)**  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Lombard Iron Works & Supply Co., Augusta, Ga.

**ENVELOPES.**  
Young & Soden Co., Baltimore, Md.

**ESTIMATORS (Building & Construction.)**  
Martin, Joe B., Charlotte, N. C.  
Spring, Chas. Herbert, Greensboro, N. C.

**EXCAVATING MACHINERY.**  
Bay City Shovels, Inc., Bay City, Mich.  
Bucyrus-Erie Co., So. Milwaukee, Wis.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**EXCAVATORS (Clamshell and Orange Peel.)**  
Northwest Engineering Co., Chicago, Ill.<

## BONAFIDE HIGH DUTY ENGINES

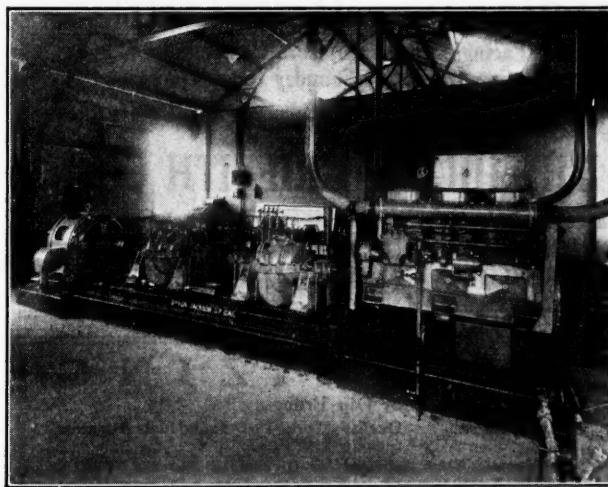
*for peak load and standby*

Sterling  
High  
Duty



Internal  
Combustion  
Engines

12 to 565 B. H. P.  
Gas or gasoline.



Quick starting! Easiest running, because of 80% lighter bearing pressures, with the use of successful aluminum pistons and counter-balanced crankshaft, Sterling engines, have unparalleled records of prolonged running. 2000 to 6000 hours at high speed—18 to 24 hour practically continuous service. A most complete catalog and engineering service is available gratis.

### STERLING ENGINE COMPANY

Home Office and Plant:  
1270 Niagara Street  
Buffalo, N. Y.

Dept. C-7

900 Chrysler Building,  
New York, N. Y.

*We announce many new improvements in*  
**COTTON GINNING MACHINERY  
and HEAVY DUTY OIL ENGINES**

*Write for Details*

CONTINENTAL GIN CO., 4600 4th Avenue So.  
Birmingham, Ala.

### WATER FILTERS

Pressure and Gravity type for Municipal Water Supplies,  
Rayon Manufacturing Plants, Textile Finishing Establishments,  
Raw Water Ice Plants, Laundries, Etc.

ROBERTS FILTER MANUFACTURING COMPANY  
604 Columbia Avenue  
Darby, Pennsylvania

**ALLIS-CHALMERS MFG. CO.**  
MILWAUKEE, WIS., U. S. A.  
DESIGNERS AND BUILDERS OF  
Steam Turbines, Electrical Machinery, Steam, Gas  
and Oil Engines, Centrifugal Pumps, Crushing  
& Cement Machinery, Etc.

### Water Purification Plants *Any Type—Any Purpose—Any Capacity*

Dry Chemical Feed Machines  
Swimming Pool Filters

E. W. BACHARACH & CO.  
Rialto Bldg.  
Kansas City, Mo.

SPECIFY  
**KERLOW**  
STEEL  
FLOOR GRATINGS AND STAIR STEPS  
The strongest and lightest  
BRIDGE AND FLOOR SLABS (Monolithic)  
Catalogue and Prices on request  
KERLOW STEEL FLOORING COMPANY  
222-228 Culver Ave., Jersey City, N. J.  
See Telephone book for representations

**WATER PURIFICATION**  
**FILTERS and SOFTENERS**  
for Industrial Plants, Railroads  
Swimming Pools and Municipalities

AMERICAN WATER SOFTENER CO., INC.  
S. E. Cor. 4th & Lehigh Ave.  
Philadelphia

**SEAWALLS** WEBER SYSTEM  
MANY DIFFERENT TYPES TO MEET EVERY CONDITION,  
SAFEST AND MOST PERMANENT CONSTRUCTION.  
ENORMOUS SAVING OF COST  
FOR COMPLETE INFORMATION WRITE TO—  
SHORE-LINE BUILDERS, INC.  
JACKSONVILLE, FLORIDA.

WEBER SYSTEM BULKHEADS

**Water Purification Equipment**  
Water Softeners and Filters—Of Every Type and Size  
Taste—Odor—Chlorine—Color—Iron Removal Plants  
Wet and Dry Chemical Feeders—Proportioning Devices  
Rate of Flow Controllers—Gauges—Venturi Meters  
INTERNATIONAL FILTER CO. 59 EAST VAN BUREN STREET  
CHICAGO

For 36 Years } **HILL** { has meant highest reputation in Foundry Supplies

Facings, Plumbago, Core Compound, Parting and Every Foundry Requirement

Write for prices

**THE HILL & GRIFFITH CO.**

Factories and Offices:  
CINCINNATI, OHIO  
BIRMINGHAM, ALA.

Warehouse:  
CHICAGO, ILL.

## GALVANIZING

Hot Dip Process

Distinctive Service Quality Work Individual Attention

Adequate Facilities

Inquiries Also Solicited for Galvanized Material

**ENTERPRISE GALVANIZING CO.**  
2501-29 E. Cumberland St., PHILADELPHIA, PA.

Phones: Regent 2479-2480

## GALVANIZING HOT DIPPED PROCESS

The largest job galvanizing plant in the United States  
**GALVANIZED PRODUCTS FURNISHED**

**JOSEPH P. CATTIE & BROTHERS**  
PHILADELPHIA, PA.

## PATTERNS

Match Plates properly mounted and gated, insures uniform moulds, increased production with unskilled Labor.

Submit us your problem for increased foundry production.

**A. W. HAAS PATTERN CO.**

179½ Garnett St., S. W.

Atlanta, Georgia

## CONTRACT MACHINE WORK

Parts and Complete Machines  
Heat Treating and Grinding

Mail blue prints for quotations

**GENERAL MACHINE WORKS**  
YORK, PA.

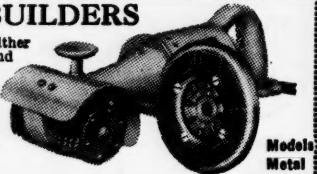
## SPECIAL DEVICE BUILDERS

We Build Devices in Their Entirety, Either Singly or in Quantity. **TOOLS** and **DIES**—**METAL STAMPING**. Experimental Work—Special Manufacturing. Inventions Made Practical for Quantity Production.

**GERDING BROS.**

Mechanical Productionists

Pearl and Vine Sts., CINCINNATI, OHIO.



MA in 2878

Mountain State Steel Foundries, Parkersburg, W. Va.  
Richmond Foundry & Mfg. Co., Richmond, Va.

**FOUNDRY** Equipment and Supplies.  
Hill & Griffith Co., Cincinnati, O.

—Facings (Tale and Soapstone.)  
Hill & Griffith Co., Cincinnati, O.

**FURNACES** (Water-Cooled.)  
Fuller Lehigh Co., Fullerton, Pa.

**GALVANIZED** Material.  
Bessemer Galvanizing Works, Birmingham, Ala.  
Cattie & Bros., Jas. P., Philadelphia, Pa.  
Enterprise Galvanizing Co., Phila., Pa.

—Steel and Iron.  
American Rolling Mill Co., Middletown, O.  
American Sheet & Tin Plate Co., Pittsburgh, Pa.

**GALVANIZING** (Hot Dip.)  
Bessemer Galvanizing Works, Birmingham, Ala.  
Cattie & Bros., Jas. P., Philadelphia, Pa.  
Enterprise Galvanizing Co., Phila., Pa.  
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

**GAS HOLDERS.**  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Birmingham.

—Producers  
Ward & Co., R. D., Philadelphia, Pa.

**GASOLINE** and **KEROSENE**.  
Gulf Refining Co., Pittsburgh, Pa.

**GATES** (Waterworks—Irrigation, etc.)  
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

**GEARS.**  
DeLaval Steam Turbine Co., Trenton, N. J.  
Marie Gear & Machine Co., Phila., Pa.  
General Electric Co., Schenectady, N. Y.

—(Worm Reduction.)  
DeLaval Steam Turbine Co., Trenton, N. J.

**GENERATORS, MOTORS** (New.)  
General Electric Co., Schenectady, N. Y.  
—(Used.)  
O'Brien Machinery Co., Phila., Pa.

**GEOLOGISTS.** (See Engineers Geological.)

**GLASS** (Art.)  
Hires Turner Glass Co., Philadelphia, Pa.

—(Plate.)  
Hires Turner Glass Co., Philadelphia, Pa.

—(Window.)  
Hires Turner Glass Co., Philadelphia, Pa.  
Pittsburgh Plate Glass Co., Pittsburgh.

—(Wire.)  
Hires Turner Glass Co., Philadelphia, Pa.

**GRADERS** (Elevating.)  
Caterpillar Tractor Co., Peoria, Ill.

**GRANITE** (Building and Monumental.)  
North Carolina Granite Corp., The, Mount Airy, N. C.

**GRATES** and **Grate Bars**.  
Schoeld's Sons Co., J. S., Macon, Ga.

**GRATING** (Area, Flooring, Sidewalk.)  
Blow-Knox Co., Pittsburgh, Pa.  
Hendrick Mfg. Co., Carbondale, Pa.  
Kerlow Steel Flooring Co., Jersey City, N. J.

**GRAVEL** (Roofing and Road.)  
American Limestone Co., Knoxville, Tenn.  
Armenia Corp., The, Baltimore, Md.  
Berley & Co., W. W., Roanoke, Va.  
Friend & Co., Inc., Petersburg, Va.  
Georgia Sand & Gravel Co., Augusta, Ga.

**GREASE** Cups.  
Lepkeheimer Co., The, Cincinnati, O.

**GRILLES** (Brass, Bronze, Steel, etc.)  
Manhattan Perfected Metal Co., Inc., Long Island City, N. Y.

**GRINDERS** WHEELS.  
Carborundum Co., Niagara Falls, N. Y.

**GUARD RAIL** (Road.)  
National Traffic Guard Co., Atlanta.  
Robertson Steel & Iron Co., W. F., Cincinnati, O.

**GUNITE** CONSTRUCTION.  
Cement Gum Construction Co., Chicago.  
Gunite Constr. Co., Kansas City.  
Gunite Constr. Co., New York City.

**GUNPOWDER.**  
Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

**GUNS** (Hydraulic).  
Georgia Iron Works, Augusta, Ga.

**HANGARS** (Airplane).  
Blow-Knox Co., Pittsburgh, Pa.  
Ingalls Iron Works, Birmingham, Ala.

**HARBOR IMPROVEMENTS.**  
Arundel Corp., Baltimore, Md.  
Atlantic, Gulf & Pacific Co., New York.

**HEATERS** (Asphalt).  
Hoehner Co., Jas., Cincinnati, O.

**HEAT EXCHANGERS.**  
Aero Products, Inc., New York, N. Y.

**HEATING** Apparatus (Engineers and Contractors.)  
Poe Piping & Heating Co., Greenville, S. C.

**HOISTS** (Gasoline).  
Dake Engine Co., Grand Haven, Mich.  
—(Steam.)  
Dake Engine Co., Grand Haven, Mich.

**HOPPERS** (Aggregate, Measuring and Weighing.)  
Blow-Knox Co., Pittsburgh, Pa.

**HOTELS.**  
Hoiss Hotel Systems, St. Louis, Mo.  
Southern Hotel, The, Baltimore, Md.

**HUMIDIFYING AND DRYING EQUIPMENT.**  
Niagara Blower Co., New York, N. Y.

**HYDRANTS** (Fire).  
Ladlow Valve Mfg. Co., The, Troy, N. Y.  
Moers & Bros. Co., The, F. E., Ashland, O.  
Wood & Co., R. D., Philadelphia, Pa.

**HYDRO - ELECTRIC POWER COMPANIES** (Offering Industrial and Commercial Opportunities.)  
Crisp County Power Commission, Cordele, Ga.  
Texas Power & Light Co., Dallas, Texas.

**INCINERATORS.**  
Brooke-Fisher Co., Atlanta, Ga.  
D-N Corporation, Winston-Salem, N. C.  
Goder, Joseph, Chicago, Ill.

**INCORPORATORS.**  
Delaware Registration Trust Co., Wilmington, Del.

**INSULATING BOARD.**  
Armstrong Cork & Insulation Co., Lancaster, Pa.  
United Cork Companies, Lyndhurst, N. J.  
—Materials.  
General Electric Co., Schenectady, N. Y.

—Quilt.  
Cabot, Inc., Samuel, Boston, Mass.

**INVESTMENT SECURITIES.**  
Electric Bond & Share Co., New York.  
Hanchett Bond Co., Inc., The, Chicago, Ill.  
Nevens & Co., John, Chicago.  
Provident Savings Bank & Trust Co., Cincinnati, Ohio.

**IRON.**  
Oliver Iron & Steel Corp., Pittsburgh, Pa.  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.  
—(Ingot, For Culverts, etc.)  
American Rolling Mill Co., Middletown, O.

**JAIL CELLS.**  
Roanoke Iron & Bridge Works, Roanoke, Va.

**JOINTS** (Pipe).  
Leadite Co., Philadelphia, Pa.

KETTLES (Pavers and Roofers.) Honhorst Co., Jas., Cincinnati, O.	MAIL CHUTES. Cutler Mail Chute Co., Rochester, N. Y.
KILNS (Cement.) Alice Products, Inc., New York, N. Y.	MARBLE (Producers and Manufacturers.) Georgia Marble Co., The, Tate, Ga.
LADDERS (Rolling.) Myers & Bro. Co., The F. E., Ashland, O.	METAL-Cutting Machinery. Earle Gear & Machine Co., Phila., Pa.
LAMPS (Incandescent.) Western Electric Co., New York City. Westinghouse Lamp Co., New York City.	—Working Machinery. Bliss Co., E. W., Brooklyn, N. Y. Ryerson & Son, Inc., Jos. T., St. Louis and New York.
LANDSCAPE GARDENERS. Howard-Hickory Co., Hickory, N. C.	MILL MACHINERY and SUPPLIES. Lombard Iron Works & Supply Co., Augusta, Ga.
LATHES. Sebastian Lathe Co., Cincinnati, Ohio.	MIXERS (Hot.) Koehring Co., Milwaukee, Wis.
LIGHTING (Factory and Mill.) Westinghouse Lamp Co., New York City.	—(Mortar.) Chain Belt Co., Milwaukee, Wis. Dunsmore & Boschert Press Co., Syracuse, N. Y. Jaeger Machine Co., Columbus, Ohio.
—Fixtures (Electric.) Western Electric Co., New York City. Westinghouse Lamp Co., New York City.	—(Plaster.) Chain Belt Co., Milwaukee, Wis. Dunsmore & Boschert Press Co., Syracuse, N. Y. Jaeger Machine Co., Columbus, Ohio.
LININGS (Flue, Fire Clay.) Lee Clay Products Co., Clearfield, Ky. Owensboro Sewer Pipe Co., Owensboro, Ky.	MOTORS (Electric.) Allis-Chalmers Mfg. Co., Milwaukee, Wis. Armstrong & Bro. Co., R. S. Atlanta, Ga. Fairbanks, Morse & Co., Chicago, Ill. General Electric Co., Schenectady, N. Y. Western Electric Co., New York City.
—(Tube Mill.) Fuller Lehigh Co., Fullerton, Pa.	MOTOR TRUCKS. International Harvester Co. of America, Inc., Chicago, Ill.
LINOLEUM (Battleship, Embossed Inlaid, Inlaid, Jasper.) Congoleum-Nairn Inc., Kearny, N. J.	NAILS (Cut.) Reading Iron Co., Reading, Pa.
LITHOGRAPHERS and ENGRAVERS. Smith & Son Co., Oscar T., Baltimore, Md. Young & Soden Co., Baltimore, Md.	—(and Spikes.) American Steel & Wire Co., Balto., Md. Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. Youngstown Sheet & Tube Co., Youngstown, Ohio.
LOADING and UNLOADING MACHINERY (Portable.) Northwest Engineering Co., Chicago, Ill.	NATURAL GAS COMPANIES. (Offering Industrial and Commercial Opportunities.) Southern Natural Gas Corp., Birmingham.
LOCOMOTIVES (Compressed Air.) Porter Co., H. K., Pittsburgh, Pa.	NURSEKBYMMEN. Howard-Hickory Co., Hickory, N. C.
—(Fireless Stored Steam.) Porter Co., H. K., Pittsburgh, Pa.	NUTS (Cold Punched.) Oliver Iron & Steel Corp., Pittsburgh, Pa. Russell, Burdsall & Ward Bolt & Nut Co., Port Chester, N. Y.
—(Gasoline.) Porter Co., H. K., Pittsburgh, Pa. Whitcomb Locomotive Co., Rochelle, Ill.	OIL (Fuel and Gas.) Gulf Refining Co., Pittsburgh, Pa.
—(Industrial.) Porter Co., H. K., Pittsburgh, Pa. Southern Iron & Equipment Co., Atlanta. Whitcomb Locomotive Co., Rochelle, Ill.	—Cups. Lenkenheimer Co., The Cincinnati, O.
—(Mining.) Porter Co., H. K., Pittsburgh, Pa. Whitcomb Locomotive Co., Rochelle, Ill.	ORE-WASHING MACHINERY. Georgia Iron Works, Augusta, Ga.
—(Railway.) Porter Co., H. K., Pittsburgh, Pa. Southern Iron & Equipment Co., Atlanta. Whitcomb Locomotive Co., Rochelle, Ill.	ORNAMENTAL Bronze Work. Heath Co., J. S., Waukegan, Ill.
LUBRICANTS. Gulf Refining Co., Pittsburgh, Pa.	—Iron Work. Austin Bros. Bridge Co., Atlanta, Ga. Bonneville Iron & Bridge Wks., Roanoke, Va. Sneed Architectural Iron Works, Louisville, Ky.
LUBRICATORS (Force Feed.) Lenkenheimer Co., The Cincinnati, O.	—Metal Work. (Bronze, Iron, Steel, etc.) Cincinnati Mfg. Co., Cincinnati, O.
LUMBER (Ceiling, Flooring, Siding.) Jackson Lumber Co., Lockhart, Ala.	PAINT (Mill White, for Interior.) Sommerhous Sons, Inc., L. New York.
—(Creosoted.) Amer. Creosote Wks., Inc., New Orleans. Amer. Creosoting Co., Inc., Louisville, Ky. Atlantic Creosoting Co., Norfolk, Va. Ave. & Lord Tie Co., Inc., Chicago. Eppinger & Russell Co., New York, N. Y. Gulf State Creos. Co., Hattiesburg, Miss.	—(Preservative.) Cabot, Inc., Samuel, Boston, Mass.
—(Hardwoods, Cypress, etc.) Reynolds Bros. Lbr. Co., Albany, Ga.	PANELBOARDS. Adam Electric Co., Frank, St. Louis.
—(Heavy Construction, Pitch, Pine, etc.) Reynolds Bros. Lbr. Co., Albany, Ga.	PARTITIONS (Sectionfold, Rolling, Wood.) Wilson Corp., The, J. G., New York.
—(Zinc Metal Arsenic Treated.) Curtis-Howe Corp., New York City.	PATENT ATTORNEYS. Buck, Sterling P., Washington, D. C. Coleman, Watson E., Washington, D. C. Eaton, Paul B., Charlotte, N. C. Sennett, Edward C., Washington, D. C. Seymour & Bright, Washington, D. C.
MACHINERY (Special.) Bliss Co., E. W., Brooklyn, N. Y. Earle Gear & Machine Co., Phila., Pa. General Machine Works, York, Pa. Gerdin Bros., Cincinnati, O.	PATTERNS (Drawing, etc.) Haas Pattern Co., A. W., Atlanta, Ga.
—(and Supplies (New and Used.) Cincinnati Mehry & Supply Co., Cincinnati, O.	PAVING Blocks (Creosoted Wood.) American Creosote Works, New Orleans
Electric Service Co., Cincinnati, Ohio. Machinery Record, Richmond, Va. Marine Metal & Supply Co., New York. O'Brien Machinery Co., The, Phila., Pa. Partridge, Arthur S., St. Louis, Mo. Reading Engineering Wks., Reading, Pa. Zelmaier Supply Co., W. A., St. Louis.	CAST IRON PIPE—SAND SPUN (CENTRIFUGALLY CAST) REG. U. S. PAT. OFF.
MACHINE TOOLS. Sebastian Lathe Co., Cincinnati, Ohio.	AND PIT CAST—GATE VALVES—VALVE BOXES
—(Used.) Delta Equipment Co., Philadelphia, Pa. O'Brien Machinery Co., Philadelphia, Pa.	

## IN CASE OF FIRE better NO hydrant than one that is broken!

The Firemen know exactly where to expect a hydrant when they go on their fast run to a fire.

If they arrive at the scene and find a broken hydrant, they lose a lot of valuable time starting up again and getting on to the next one—to say nothing of the delay in running out the extra hose. This cause of inefficiency occurs less frequently with the

## MATHEWS MODERNIZED HYDRANT

Because broken Mathews Hydrants can be replaced in a few minutes—without digging or breaking the cement—they are replaced without loss of time and at less cost for labor. For these important reasons, Mathews never need be out of commission long at a time—assuring more constant fire protection with greater efficiency for the department.

The vital moving parts are protected against ice and rust—and a broken Mathews cannot leak or cause damage by flooding.

Write for the new descriptive MATHEWS  
MODERNIZED HYDRANT Booklet

## R. D. WOOD & CO., PHILA., PA. ESTABLISHED IN 1803

CAST IRON PIPE—SAND SPUN (CENTRIFUGALLY CAST)  
REG. U. S. PAT. OFF.  
AND PIT CAST—GATE VALVES—VALVE BOXES

## TAYLOR FORGE



SEAMLESS  
STEEL FITTINGS  
FOR WELDING

ELBOWS, TEES, RE-  
DUCERS, BULL PLUGS,  
AND WELDING NECK  
FLANGES

Write for descriptive Bulletin 31-1

TAYLOR FORGE & PIPE WORKS, CHICAGO  
Box 485, Chicago 50 Church St., New York

## CAST IRON PIPE - AND FITTINGS -

American Cast Iron Pipe Company  
BIRMINGHAM, ALA.  
SALES OFFICES IN PRINCIPAL CITIES

## FIRE CLAY, SEWER PIPE, FLUE LINERS and WALL COPING

Write for Catalogue and Discounts  
Owensboro Sewer Pipe Co. Owensboro, Ky.

## SALT GLAZED SEWER AND CULVERT PIPE

Wall Coping, Drain Tile, Flue Lining, Chimney Tops, Hollow  
Tile, Fire Proofing, Vitrified Brick, Fire Brick

BANNON'S PATENT LIDDED PIPE FOR STEAM CONDUITS  
BANNON PIPE CO. LOUISVILLE, KY.

## MANISTEE CENTRIFUGAL P U M P S

Condensers—Chemical Evaporators—Gate Valves—Hydrants  
MANISTEE IRON WORKS CO.  
156 Turner Ave., MANISTEE, MICHIGAN

## GLAMORGAN PIPE & FOUNDRY CO.

GENERAL FOUNDRY AND MACHINISTS  
LYNCHBURG, VA.

## SAND PUMPS

A wide range of types in sizes 4" to 15"  
For belt drive and for direct connection to motor  
Illustrated booklet on request

GEORGIA IRON WORKS  
AUGUSTA, GA.

—Brick.  
National Paving Brick Assn., Washington, D. C.

—Plant (Asphalt).  
Simplicity System Co., Chattanooga, Tenn.

—PENSTOCKS.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Wks., Birmingham.  
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.  
Pittsburgh-Des Moines Steel Co., Pittsburgh.  
Smith Co., S. Morgan, York, Pa.

—PERFORATED METAL.  
Chicago Perforating Co., Chicago, Ill.  
Endic Perforating Co., Rochester, N. Y.  
Harrington & King Perf. Co., Chicago.  
Hendrick Mfg. Co., Carbondale, Pa.  
Manhattan Perforated Metal Co., Inc.,  
Long Island City, N. Y.  
Mundt & Sons, Charles, Jersey City, N. J.

—PETROLEUM REFINERS.

Gulf Refining Co., Pittsburgh, Pa.

—PHOSPHATE ACID.

Davison Chemical Co., Baltimore, Md.

—PIG-IRON.  
Tennessee Coal, Iron & Railroad Co.,  
Birmingham, Ala.

—PILING (Creosoted).  
Amer. Creosote Wks., Inc., New Orleans.  
Amer. Creosoting Co., Inc., Louisville.  
Atlantic Creosoting Co., Norfolk, Va.  
Ayer & Lord Tie Co., Inc., Chicago.

—(Steel Sheet).  
Carnegie Steel Co., Pittsburgh, Pa.  
Hyman-Michaels Co., Chicago, Ill.  
Jones & Laughlin Steel Corp., Pittsburgh, Pa.  
Zelnicker Supply Co., W. A. St. Louis.

—(Yellow Pine).  
Jackson Lumber Co., Lockhart, Ala.

—PILLOW BLOCKS.  
Goldens' Fdry. & Mch. Co., Columbus, Ga.

—PIPE.  
Albert & Davidson Pipe Corp., Brooklyn, N. Y.  
Albert Pipe Sup. Co., Inc., Brooklyn, N. Y.  
Birmingham Boiler & Engr. Co., Birmingham, Ala.  
Central Pipe & Supply Co., Charleston, W. Va.  
Greenspon's Sons Iron & Steel Co., St. Louis, Mo.  
Hudson Pipe & Supply Co., Bayonne, N. J.  
Maryland Pipe & Steel Corp., Baltimore, Md.  
National Tube Co., Pittsburgh, Pa.  
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.  
Power Piping Co., Pittsburgh, Pa.

—(Cast Iron).  
Amer. Cast Iron Pipe Co., Birmingham.  
Cast Iron Pipe Research Assn., Chicago.  
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.  
U. S. Pipe & Fdry. Co., Burlington, N. J.

—(Hammer-Welded).  
National Tube Co., Pittsburgh, Pa.

—(Iron and Steel).  
American Rolling Mill Co., Middletown.

—(Second-Hand).  
Albert & Davidson Pipe Corp., Brooklyn, N. Y.

Albert Pipe Sup. Co., Inc., Brooklyn, N. Y.  
Central Pipe & Sup. Co., Charleston, W. Va.  
Greepoint Iron & Pipe Co., Inc., Brooklyn, N. Y.  
Hudson Pipe & Supply Co., Bayonne, N. J.  
Machinery Record, Richmond, Va.  
Marine Metal & Supply Co., New York.  
Maryland Pipe & Steel Corp., Baltimore, Md.

—(Spiral Riveted).  
Taylor Forge & Pipe Wks., Chicago, Ill.

—(Spiral Welded).  
American Rolling Mill Co., Middletown.

—(Steel).  
Bethlehem Steel Co., Bethlehem, Pa.  
Chicago Bridge & Iron Wks., Birmingham.  
Jones & Laughlin Steel Corp., Pittsburgh, Pa.  
National Tube Co., Pittsburgh, Pa.  
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.  
Power Piping Co., Pittsburgh, Pa.  
Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Steel, Large Diameter).  
Aico Products, Inc., New York, N. Y.

—(Wrought Iron).  
Reading Iron Co., Reading, Pa.

—Covering (Cork).  
United Cork Companies, Lyndhurst, N. J.

—Fittings.  
Amer. Cast Iron Pipe Co., Birmingham.  
Georgia Iron Works, Augusta, Ga.

—Unions and Joints.  
Dart Mfg. Co., E. M., Providence, R. I.

—Systems (Industrial).  
Moore Pipe & Sprinkler Co., Jacksonville, Fla.  
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.  
Power Piping Co., Pittsburgh, Pa.  
Southern Automatic Sprinkler Company, Birmingham.

—PLATES (Steel).  
American Rolling Mill Co., Middletown.  
Bethlehem Steel Co., Bethlehem, Pa.  
Carnegie Steel Co., Pittsburgh, Pa.  
Central Iron & Steel Co., Harrisburg, Pa.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Gulf States Steel Co., Birmingham, Ala.  
Jones & Laughlin Steel Corp., Pittsburgh, Pa.  
Tennessee Coal, Iron & Railroad Co., Birmingham.

—PLOWS (Mechanical).  
Federal Farm Equipment Co., Jacksonville, Fla.

—POLES (Creosoted).  
Amer. Creosote Wks., Inc., New Orleans.  
Amer. Creosoting Co., Inc., Louisville, Ky.  
Atlantic Creosoting Co., Norfolk, Va.  
Ayer & Lord Tie Co., Inc., Chicago.  
Brown Wood Preserving Co., Louisville, Ky.

—(Tubular, Steel).  
Bessemer Galvanizing Works, Birmingham, Ala.  
National Tube Co., Pittsburgh, Pa.

—(Yellow Pine).  
Jackson Lumber Co., Lockhart, Ala.

—(Zinc Meta Arsenite Treated).  
Curtin-Howe Corp., New York City.

—POLISHING MACHINERY.  
(Wheels, Blocks).  
Carborundum Co., Niagara Falls, N. Y.

—POSTS, (Cast Iron, Railway and Highway).  
U. S. Pipe & Foundry Co., Burlington, N. J.

—POWER TRANSMISSION MACHINERY.  
Diamond Chain & Mfg. Co., Indianapolis.  
Diamonds' Fdy. & Mch. Co., Columbus, Ga.  
Schofield's Sons Co., J. S., Macos, Ga.

—PRESSES, (Baling, Cottonseed Oil, Hydraulic and Power).  
Dunning & Bochart Press Co., Inc., Syracuse, N. Y.  
Ripley Foundry & Machine Co., Ripley, O.

—(Metal Stamping).  
Bliss Co., E. W., Brooklyn, N. Y.

—PRINTERS (Book, Catalog, Job).  
Smith & Son Co., Oscar T., Baltimore, Md.  
Young & Selden Co., Baltimore, Md.

—PRODUCER (Gas Machines).  
Wood & Co., R. D., Phila., Pa.

—PULLEYS (Friction Clutch).  
Caldwell Co., Inc., W. E., Louisville, Ky.

—Shafting and Hangers.  
Goldens' Fdy. & Mch. Co., Columbus, Ga.

—PULVERIZED COAL EQUIPMENT.  
Fuller Lehigh Co., Fullerton, Pa.

—PULVERIZERS (See Crushing and Pulverizing Machinery).

—PUMPING MACHINERY.  
American Well Works, Aurora, Ill.  
Cameron, A. S., Steam Pump Works  
(Ingersoll-Rand Co.), New York City.  
Fairbanks, Morse & Co., Chicago, Ill.  
Layne & Bowler, Inc., Memphis, Tenn.  
Moyer & Son Co., The F. E., Ashland, O.  
Petersburg Mch., Pump & Well Co.,  
Petersburg, Va.  
Virginia Mch. & Well Co., Richmond, Va.

—PUMPS (Air).  
Manistee Iron Works Co., Manistee, Mich.

—(Boiler Feed).  
Cameron, A. S., Steam Pump Works  
(Ingersoll-Rand Co.), New York City.

DeLaval Steam Turbine Co., Trenton, N.J.  
Manisteet Iron Works Co., Manisteet, Mich.  
Myers & Bro. Co., The F. E. Ashland, O.

## —(Centrifugal.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
American Well Works, Aurora, Ill.  
Cameron, A. S., Steam Pump Works  
(Ingersoll-Rand Co.), New York City.  
DeLaval Steam Turbine Co., Trenton, N.J.  
Fairbanks, Morse & Co., Chicago, Ill.  
Labour Co., Elkhart, Ind.  
Layne & Bowler, Inc., Memphis, Tenn.  
Manisteet Iron Works Co., Manisteet, Mich.

## —(Deep Well.)

American Well Works, Aurora, Ill.  
Layne & Bowler, Inc., Memphis, Tenn.

## —(Hydraulic.)

Dunning & Boschert Press Co., Inc.,  
Syracuse, N.Y.

## —(Power.)

American Well Works, Aurora, Ill.

## —(Pulverized Coal.)

Fuller Lehigh Co., Fullerton, Pa.

## —(Sand and Dredging.)

Georgia Iron Works, Augusta, Ga.

## —(Steam.)

Cameron, A. S., Steam Pump Works  
(Ingersoll-Rand Co.), New York City.  
Fairbanks, Morse & Co., Chicago, Ill.

## —(Water Works.)

American Well Works, Aurora, Ill.  
Layne & Bowler, Inc., Memphis, Tenn.  
Manisteet Iron Works Co., Manisteet, Mich.

## PUNCHING AND SHEARING MACHINERY.

Bliss Co., E. W., Brooklyn, N.Y.  
Whitney Metal Tool Co., Rockford, Ill.

## QUANTITY SURVEYS.

Spring, Chas. Herbert, Greensboro, N.C.

## RACK RAKES.

Newport News Shipbuilding & Dry Dock  
Co., Newport News, Va.

## RADIATOR ENCLOSURES.

Manhattan Perforated Metal Co., Inc.,  
Long Island City, N.Y.

## RAILINGS (Iron Pipe.)

Pipe Railing Constr. Co., Long Island  
City, N.Y.

## RAILROAD Equipment and Supplies (New.)

Robinson & Orr, Pittsburgh, Pa.

—Equipment and Supplies.  
(Used.)

Smith & Co., W. M., Birmingham, Ala.  
Southern Iron and Equip. Co., Atlanta.  
Zelnicker Supply Co., W. A., St. Louis.

## —(Frogs and Switches.)

Bothlehem Steel Co., Bothlehem, Pa.  
Robinson & Orr, Pittsburgh, Pa.

## RAILROADS — (Offering Industrial, Agricultural and Commercial Opportunities.)

Atlanta and West Point R. R., Atlanta.  
Central of Georgia Rwy., Savannah, Ga.  
Model Land Company, Flagler System,  
St. Augustine, Fla.  
Norfolk & Western Railway, Roanoke, Va.

## RAILS (New and Used.)

Carnegie Steel Co., Pittsburgh, Pa.  
Hyman-Michaels Co., Chicago, Ill.  
Perry, Burton, Doane Co., Philadelphia.  
Robinson & Orr, Pittsburgh, Pa.  
Smith & Co., W. M., Birmingham, Ala.  
Southern Iron & Equip. Co., Atlanta, Ga.  
Sweet's Steel Co., Williamsport, Pa.  
Tennessee Coal, Iron & Railroad Co.,  
Birmingham, Ala.  
Zelnicker Supply Co., W. A., St. Louis.

## RAILWAYS (Marine.)

Charleston Dry Dock and Machine Co.,  
Charleston, S.C.

## RECEPTACLES (Self-Closing — Waste Paper.)

Whitaker Paper Co., Baltimore, Md.

## REINFORCING for Concrete.

American Steel and Wire Co., Baltia, Md.  
Austin Bros. Bridge Co., Atlanta, Ga.  
Carnegie Steel Co., Pittsburgh, Pa.

Dietrich Brothers, Baltimore, Md.  
Gulf State Steel Co., Birmingham, Ala.  
Jones & Laughlin Steel Corp., Pittsburgh, Pa.  
Oliver Iron & Steel Corp., Pittsburgh, Pa.

## RIVER &amp; HARBOR IMPROVEMENTS, (Dredging, Docks, Wharves, etc.)

Arundel Corp., The, Baltimore, Md.  
Atlantic Gulf and Pacific Co., New York.  
Kansas City Bridge Co., Kansas City.

## RIVETS.

Russell, Burdsall & Ward Bolt & Nut  
Co., Port Chester, N.Y.

## ROAD and Street Machinery.

Blaw-Knox Co., Pittsburgh, Pa.  
Buffalo-Springfield Roller Co., Springfield, O.  
Caterpillar Tractor Co., Peoria, Ill.  
Gillie Machine Co., Tonawanda, N.Y.  
Universal Crane Co., Lorain, Ohio.

## —and Street Material.

Boxley & Co., W. W., Roanoke, Va.  
Woodstock Slag Corp., Birmingham, Ala.

## —Graders and Scrapers.

Caterpillar Tractor Co., Peoria, Ill.

## —Oils and Preservatives.

Gulf Refining Co., Pittsburgh, Pa.

## —Rollers (Steam and Gasoline.)

Buffalo-Springfield Roller Co., Springfield, O.

## —Scarfiers.

Buffalo-Springfield Roller Co., Springfield, O.

## ROOF INSULATION.

Armstrong Cork & Insulation Co., Lancaster, Pa.  
United Cork Companies, Lyndhurst, N.J.

## ROOFING (Asphalt Built-Up.)

Barber Asphalt Co., Philadelphia, Pa.

## —(Ready Prepared, Felt, Tar, Asbestos, Asphalt.)

Buberoid Co., New York City.

## —and Siding (Composition.)

Buberoid Co., New York City.

## —and Siding (Metal.)

American Rolling Mill Co., Middletown, O.  
American Sheet and Tin Plate Co., Pittsburgh, Pa.  
Gulf State Steel Co., Birmingham, Ala.  
Youngstown Sheet and Tube Co., Youngstown, O.

## SAFES.

York Safe & Lock Co., York, Penna.

## SAND.

Arundel Corp., Baltimore, Md.  
Friend & Co., Inc., Petersburg, Va.  
Georgia Sand & Gravel Co., Augusta, Ga.

## SANITARY Drinking Fountains.

Bundle-Spence Mfg. Co., Milwaukee, Wis.

## SAWMILL Machinery.

Schofield's Sons Co., J. S., Macon, Ga.

## SAWS (Cold Metal.)

Earle Gear and Machine Co., Phila., Pa.

## SCRAP IRON AND STEEL.

Hunts Sons, M. J., Philadelphia, Pa.  
Perry, Burton, Doane Co., Philadelphia.  
Smith & Co., W. M., Birmingham, Ala.

## SCREEN CLOTH.

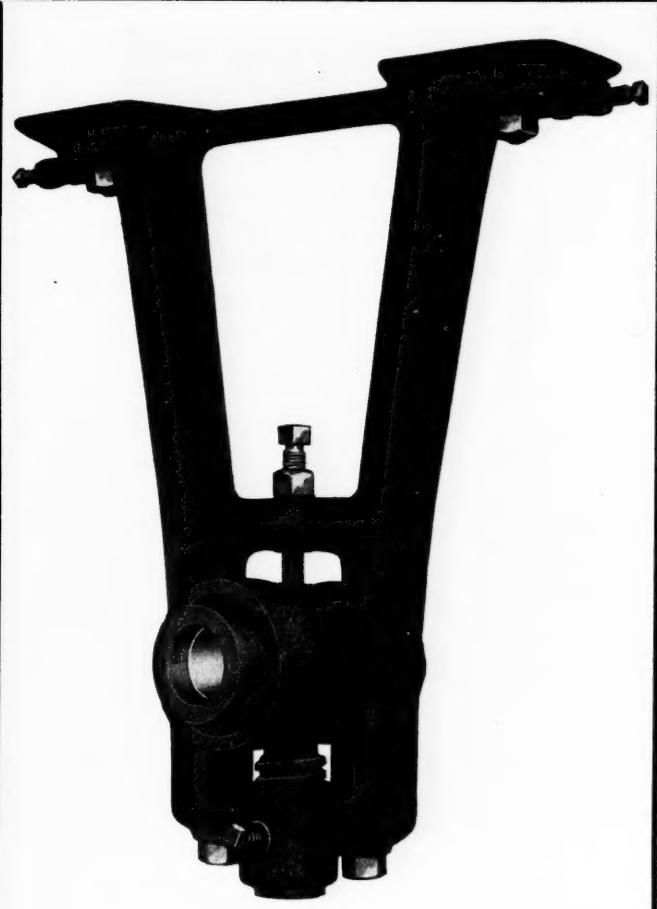
Seneca Wire & Mfg. Co., Fostoria, Ohio.

## SCREENING (For Concrete and Road Construction.)

American Limestone Co., Knoxville, Tenn.

## SCREENS (Sand, Gravel, Stone, Coal, Ore, etc.)

Chicago Perforating Co., Chicago, Ill.  
Erie Perforating Co., Rochester, N.Y.  
Gruendler Crusher & Pulverizer Co., St. Louis, Mo.  
Hendrick Mfg. Co., Carbondale, Pa.  
Mundt & Sons, Charles, Jersey City, N.J.  
Universal Crusher Co., Cedar Rapids, Ia.



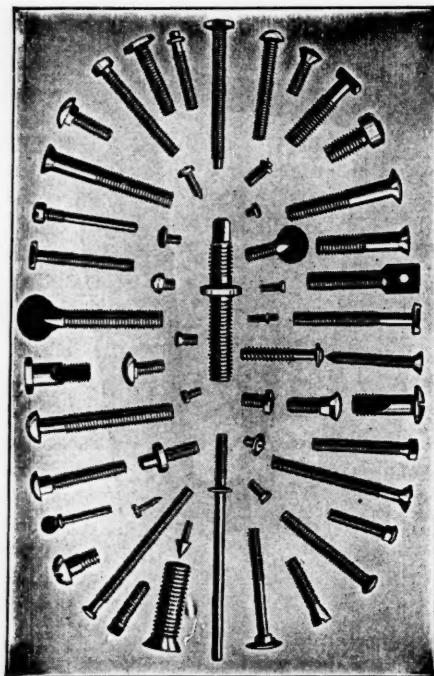
## BALL BEARING Transmission Equipment

### DROP HANGERS POST HANGERS PILLOW BLOCKS LOOSE PULLEYS and SPECIAL APPLICATIONS

We have patterns for, and can furnish Ball Bearing Boxes to fit *any make and style* of Hanger Frame.

Goldens' Foundry & Machine Co.  
Columbus Georgia

"We have furnished more Complete and Partial Pulley and Shafting Equipment to Cotton Mills than any other manufacturer in the United States."



### MACHINE SCREWS SQUARE AND HEXAGON NUTS

Specialists in upset work.  
Write for prices, if special submit samples  
advising as to quantity required.

THE PROGRESSIVE MANUFACTURING CO.  
TORRINGTON, CONN.

### THE PHOENIX IRON CO.

MANUFACTURERS OF OPEN HEARTH

Structural Steel Shapes, Beams,  
Channels, Angles, and Ship Shapes

Works: Phoenixville, Pa. Main Offices: Philadelphia, Pa.

#### OFFICES:

22 S. 15th St., Philadelphia 30 Church St., New York  
Munsey Building, Washington 110 State St., Boston  
City Savings Bk. Bldg., Albany, N. Y. 26 Victoria St., London

### THE PHOENIX BRIDGE CO.

Engineers, Fabricators, and Erectors  
Bridges and Other Structures of Steel

CAPACITY 60,000 TONS

Works and Engineering Office: Phoenixville, Pa.

**BOILERS** **SAW MILLS**  
Largest Works of the Kind in the South  
Engines—Pumps—Boiler Tubes—Grate Bars—Castings  
**LOMBARD IRON WORKS & SUPPLY CO.**  
AUGUSTA, GA.  
Reinforcing Bars—Structural, Bar and Sheet Steel  
Parts and Repairs Belting—Packing

**TANKS** **STACKS**

**DIETRICH BROTHERS**  
Structural and Ornamental Iron and Steel Works  
Large Stock of Standard and Bethlehem Shapes  
**CONCRETE REINFORCEMENTS**  
BALTIMORE, MD.

**SCREW**—Machine Products.  
Progressive Mfg. Co., Torrington, Conn.

**SCREWS** (Machine.)  
Progressive Mfg. Co., Torrington, Conn.

**SEAWALLS**.  
Shore-Line Builders, Inc., Jacksonville, Fla.

**SEWAGE** Disposal Apparatus.  
Pacific Flush-Tank Co., New York, N. Y.

—Disposal System.  
D-N Corporation, Winston-Salem, N. C.

**SEWER** Joint Compounds.  
Leadite Co., Philadelphia, Pa.  
Pacific Flush-Tank Co., New York, N. Y.

—Pipe (Vitrified).  
Benson Pipe Co., Louisville, Ky.  
Lee Clay Products Co., Clearfield, Ky.  
Owensboro Sewer Pipe Co., Owensboro, Ky.

**SHAFTING** Material (Tubular.)  
National Tube Co., Pittsburgh, Pa.

**SHARPENING** Stones.  
Carborundum Co., Niagara Falls, N. Y.

**SHEET** Metal Working Ma-  
chinery.  
Ellis Co., E. W., Brooklyn, N. Y.  
Whitney Metal Tool Co., Rockford, Ill.  
Yedex Co., The, Cleveland, Ohio.

—Steel and Iron.  
American Sheet and Tin Plate Co., Pitts-  
burgh, Pa.  
Bethlehem Steel Co., Bethlehem, Pa.  
Gulf States Steel Co., Birmingham, Ala.  
Tennessee Coal, Iron & Railroad Co.,  
Birmingham, Ala.  
Youngstown Sheet & Tube Co., Youngs-  
town, O.

**SHEETS** (Asbestos).  
Ruberoid Co., New York City.

—(Galvanized and Black.)  
American Rolling Mill Co., Middletown.  
American Sheet & Tin Plate Co., Pitts-  
burgh, Pa.

**SHINGLES** (Asbestos).  
Ruberoid Co., New York City.

**SHIPBUILDING**.  
Charleston Dry Dock & Machine Co.,  
Charleston, S. C.  
Newport News Shipbuilding & Dry Dock  
Co., Newport News, Va.

**SHOVELS** (Steam, Gas and  
Electric Power.)

Bucyrus-Erie Co., No. Milwaukee, Wis.  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**SHUTTERS** (Steel).  
Merchant & Evans Co., Philadelphia, Pa.

**SIGNALS**. (Danger.)  
Consolidated Iron-Steel Mfg. Co., Cleve-  
land, O.

**QUILICATE OF SODA**.  
Grasselli Chemical Co., Inc., Birmingham.

**SITES** (Manufacturing.)

Atlanta and West Point R. R., Atlanta.  
Central of Georgia Rwy., Savannah, Ga.  
Crisp County Power Commission, Cor-  
dele, Ga.

Galveston, City of Galveston, Texas.

Missouri-Kansas-Texas Lines, Dallas, Tex.  
Model Land Company, (Flagler System),  
St. Augustine, Fla.

Norfolk & Western Railway, Roanoke, Va.

Parkersburg, W. Va., Board of Com-  
missioners.

Reynolds Bros. Lbr. Co., Albany, Ga.

Southern Natural Gas Corp., Birmingham.

South Memphis Land Co., Memphis, Tenn.

Texas Power & Light Co., Dallas, Texas.

**SLAG** For Concrete.  
Woodstock Slag Corp., Birmingham, Ala.

—(Furnace.)  
Woodstock Slag Corp., Birmingham, Ala.

**SLINGS** (Wire Rope).  
American Steel & Wire Co., Chicago, Ill.  
Budding's Sons Co., John A., Trenton, N. J.

**SLUICE GATES AND APPLI-  
ANCES**.  
Smith Co., S. Morgan, York, Pa.

**SPEED REDUCERS**.  
Earle Gear & Mach. Co., Phila., Pa.

**SPIKES**, (Railroad, Ship.)  
Bethlehem Steel Co., Bethlehem, Pa.  
Sweet's Steel Co., Williamsport, Pa.

**SPREADER** (Surfacing Mate-  
rial)  
Gillie Machine Co., Tonawanda, N. Y.

**SPRINGS** (Machinery, Railway,  
Spiral Steel.)  
American Steel & Wire Co., Balto., Md.

—(Wire—All Kinds.)  
American Steel & Wire Co., Balto., Md.

**SPRINKLERS** (Automatic Fire.)  
Moore Pipe & Sprinkler Co., Jackson-  
ville, Fla.  
Southern Automatic Sprinkler Co., Bir-  
mingham.

**SPROCKETS**.  
Diamond Chain & Mfg. Co., Indianapolis,  
Ind.

**STACKS** (Iron and Steel.)  
Birmingham Boiler and Engineering Co.,  
Birmingham, Ala.  
Chattanooga Boiler & Tank Co., Chatta-  
nooga, Tenn.  
Chicago Bridge & Iron Wks., Birmingham.  
Downingtown Iron Works, Downingtown,  
Pa.  
Hedges Welsh Weidner Co., Chattanooga,  
Tenn.  
Ingalls Iron Works Co., Birmingham, Ala.  
Lombard Iron Works & Supply Co., Au-  
gusta, Ga.  
Pittsburgh-Des Moines Steel Co., Pitts-  
burgh, Pa.  
Schofield's Sons Co., J. S., Macon, Ga.  
U. S. Pipe & Foundry Co., Burlington,  
N. J.  
Virginia Bridge & Iron Co., Roanoke, Va.

**STAINS** (Shingle, Woodwork.)  
Cabot, Inc., Samuel, Boston, Mass.

**STAIR TRAEMS**.  
Central Iron & Steel Co., Harrisburg, Pa.

**STANDPIPES**.  
Chattanooga Boiler & Tank Co., Chatta-  
nooga, Tenn.  
Chicago Bridge & Iron Wks., Birmingham.  
Pittsburgh-Des Moines Steel Co., Pitts-  
burgh, Pa.

**STATIONERS** (Envelopes, Letter  
and Billheads, etc.)  
Smith & Son Co., Oscar T., Baltimore,  
Md.  
Young & Selden Co., Baltimore, Md.

**STEAM** (Specialties).  
Lamkenheimer Co., The Cincinnati, O.  
Mueller Co., Decatur, Ill.

**STEEL**.  
Bethlehem Steel Co., Bethlehem, Pa.  
Central Iron & Steel Co., Harrisburg, Pa.  
Dietrich Brothers, Baltimore, Md.  
Gulf States Steel Co., Birmingham, Ala.  
Jones & Laughlin Steel Corp., Pitts-  
burgh, Pa.  
Oliver Iron & Steel Corp., Pittsburgh, Pa.  
Ryerson & Son, Inc., Jos. T., St. Louis  
Tennessee Coal, Iron & Railroad Co.,  
Birmingham, Ala.  
Virginia Bridge & Iron Co., Roanoke, Va.

—(Alloy.)  
Timken Roller Bearing Co., Canton, Ohio.

—(Cold Rolled.)  
American Steel & Wire Co., Balto., Md.

—(Fabricators.)  
United Welding Co., Middletown, O.

—(Special Analysis.)  
Timken Roller Bearing Co., Canton, Ohio.

—(Tool, High Speed.)  
Bethlehem Steel Co., Bethlehem, Pa.

—Buildings (Designers and  
Builders.)  
American Bridge Co., New York, N. Y.  
Bethlehem Iron Works, Philadelphia, Pa.  
Carroll Steel & Iron Co., Green-  
wood, N. C.

—(Furnace.)  
Bethlehem Steel Co., Birmingham, Ala.  
McClintic-Marshall Co., Pittsburgh, Pa.  
Phoenix Iron Co., The, Phila., Pa.  
Pittsburgh-Des Moines Steel Co., Pitts-  
burgh, Pa.

—Forms (Curb, Gutter, Side-  
walk, Road.)  
Blow-Knox Co., Pittsburgh, Pa.

**INGALLS** **STRUCTURAL STEEL**

**Quality**

Inherent in Ingalls steel is the craftsmanship and honor of Ingalls workmen . . . an organization conceived and fostered on a foundation of good workmanship. This quality that is beyond price . . . that cannot be bought or sold . . . is the difference that makes Ingalls structural steel distinctive and wins friends.

Ingalls manufactures all kinds of structural steel, plate work, shapes, storage tanks, standard buildings—and stocks a complete line of warehouse steel. Quotations made promptly.

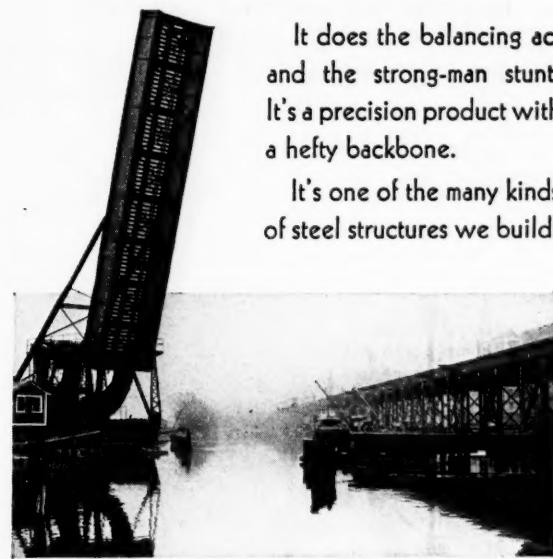
**The Ingalls Iron Works Company**  
 Main Office and Plants: Birmingham, Ala.  
 Eastern Plant: Verona, Pa. (in Pittsburgh District)  
 Branch Sales Offices: New York, New Orleans, Tampa, Charlotte, N. C., Tulsa, Jackson, Miss.

.... STANDARD ....  
**STEEL BUILDINGS**

**THE TRAINED BRIDGE**

It does the balancing act and the strong-man stunt. It's a precision product with a hefty backbone.

It's one of the many kinds of steel structures we build.



93' Bascule Bridge, Southern Railway, Richmond, Va.

**VIRGINIA BRIDGE & IRON CO.**  
 Roanoke Birmingham Memphis Atlanta New Orleans  
 New York Los Angeles Charlotte Dallas El Paso

**VIRGINIA BRIDGE**  
 STEEL STRUCTURES

**Iron and Steel Products**

**BETHLEHEM STEEL COMPANY**  
 General Offices: Bethlehem, Pa.

District Offices: New York, Boston, Philadelphia, Balti-  
 more, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Cincinnati, Detroit, Chicago, St. Louis.

Pacific Coast Distributor: Pacific Coast Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Honolulu.

**BETHLEHEM**

**BELMONT IRON WORKS**  
 PHILADELPHIA NEW YORK EDDYSTONE  
 Southern Sales Offices, Charlotte, N. C.  
 Engineers Contractors Exporters  
**Structural Steel**  
*Shop and Field Welded Steel Buildings*

**ROANOKE IRON & BRIDGE WORKS, Inc.**  
**Structural and Ornamental Iron**  
**Wrought Steel Fences**  
**Steel Bridges**  
**Jail Cells**

Write for Estimates **ROANOKE, VA.**

**AMERICAN BRIDGE COMPANY**  
 Subsidiary of **United States Steel Corporation**

**STEEL STRUCTURES**  
**BRIDGES & BUILDINGS**  
 Barges—Transmission Towers

**U.S. STEEL**

GENERAL OFFICES  
 FRICK BUILDING  
 PITTSBURGH PA.  
 CONTRACTING OFFICE IN PRINCIPAL CITIES

# TANKS

to comply with most rigid requirements

**W**E manufacture Elevated Steel Tanks for Water Storage for use in municipal water works plants and private manufacturing plants and mills.

Our shop ranks with the best in the country for the production of Tanks, Towers and Stand-pipes.

We design structures that will comply with the most rigid insurance requirements.



We also manufacture

Pumps  
Acid Tanks  
Dredge Pipe  
Incinerators  
Rotary Dryers  
Steel Buildings  
Steel Plate Work  
Municipal Castings  
Grey Iron Castings  
Boilers and Engines  
Steel Storage Tanks  
Seed and Grain Tanks

**J. S. SCHOFIELD'S SONS CO., INC.**  
Macon, Georgia, U. S. A.



## AUSTIN BROTHERS BRIDGE CO.

Structural Steel and Ornamental Iron Bridges, Reinforcing and Guard Fence

ATLANTA, GEORGIA  
Oakland City Station

## Snead Architectural Iron Works

STRUCTURAL STEEL  
ORNAMENTAL IRON

LOUISVILLE, KY.

# DAVIS

## CYPRESS TANKS

FACTORY TANKS AND STEEL TOWERS

If you handle liquids, for storage or processing, Davis Cypress Tanks very likely will provide new economies. For water, common chemicals, or for mixing and storing solids and compounds. Industrial plants and railroads have used our tanks for 42 years. Ask for estimates and catalog — both sent promptly on inquiry.

**G. M. DAVIS & SON**  
P. O. Box 5, Palatka, Florida



—Plate Construction (Riveted or Welded.)

Birmingham Boiler & Engr. Co., Birmingham, Ala.  
Birmingham Tank Co., Birmingham, Ala.

Bristol Steel & Iron Works, Inc., Bristol, Va.  
Carolina Steel & Iron Co., Greensboro, N. C.

Central Iron & Steel Co., Harrisburg, Pa.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge & Iron Wks., Birmingham, Ala.

Dowtown Iron Works, Dowtown, Pa.  
Hedges Walsh Welder Co., Chattanooga, Tenn.

Ingalls Iron Works Co., Birmingham, Ala.  
Phoenix Iron Co., The, Phila., Pa.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Schofield's Sons Co., J. S., Macon, Ga.

United Welding Co., Middletown, O.

—(Elevated Wood.)

Caldwell Co., Inc., W. E., Louisville, Ky.  
Davis & Son, G. M., Palatka, Fla.

—(Iron and Steel.)

American Bridge Co., New York, N. Y.  
Birmingham Tank Co., Birmingham, Ala.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge & Iron Wks., Birmingham, Ala.

Cole Mfg. Co., R. D., Newnan, Ga.

Dowtown Iron Works, Dowtown, Pa.

Finnigan Co., Inc., J. J., Atlanta, Ga.

Lombard Iron Works & Supply Co., Augusta, Ga.

McClinic-Marshall Co., Pittsburgh, Pa.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Schofield's Sons Co., J. S., Macon, Ga.

Titusville Iron Works Co., Titusville, Pa.

Virginia Bridge & Iron Co., Roanoke, Va.

Westinghouse Traction Brake Co., Wilmerding, Pa.

—Mixing.

Ace Products, Inc., New York, N. Y.

—(Pressure.)

Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

—(Seamless Steel.)

National Tube Co., Pittsburgh, Pa.

—(Storage, Oil, etc.)

Biggs Boiler Works, Akron, Ohio.  
Birmingham Boiler & Engr. Co., Birmingham, Ala.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge & Iron Wks., Birmingham, Ala.

Dowtown Iron Works, Dowtown, Pa.

Ingalls Iron Works Co., Birmingham, Ala.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Titusville Iron Works Co., Titusville, Pa.

United Welding Co., Middletown, O.

—(Wood.)

Caldwell Co., Inc., W. E., Louisville, Ky.

Davis & Son, G. M., Palatka, Fla.

Virginia Mch. & Well Co., Richmond, Va.

—TARPAULIN.

Atlanta Tent & Awning Co., East Point, Ga.

Fulton Bag & Cotton Mills, Atlanta, Ga.

TAX SPECIALISTS.

Ernst & Ernst, New York, N. Y.

TELEPHONE SERVICE.

American Telephone & Telegraph Co.

TENTS.

Fulton Bag & Cotton Mills, Atlanta, Ga.

TEXTILE CHEMICALS.

Grasselli Chemical Co., Inc., Birmingham.

TIES (Creosoted.)

American Creosoting Co., Louisville, Ky.

TILE (Cork Composition.)

Congoleum-Nairn Inc., Kearny, N. J.

—(Cork Flooring.)

Congoleum-Nairn Inc., Kearny, N. J.

United Cork Companies, Lyndhurst, N. J.

—(Floor.)

Hood Co., B. Mifflin, Daisy, Tenn.

—(Roof.)

Hood Co., B. Mifflin, Daisy, Tenn.

—(Sewer.)

Lee Clay Products Co., Clearfield, Ky.

TIMBER (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.

Amer. Creosoting Co., Inc., Louisville, Ky.

TIN AND TERNE PLATES.

American Sheet & Tin Plate Co., Pittsburgh, Pa.

Bethlehem Steel Co., Bethlehem, Pa.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

TOBACCO MACHINERY.

Ripley Foundry & Machine Co., Ripley, O.

TORCHES. (Contractors.)

Consolidated Iron-Steel Mfg. Co., Cleveland, O.

TOWERS (Electric Transmission.)

American Bridge Co., New York, N. Y.

Bessemer Galvanizing Works, Birmingham, Ala.

—(Radio).  
Bessemer Galvanizing Works, Birmingham, Ala.

—(Steel and Wood).  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Cole Mfg. Co., R. D., Newnan, Ga.

—(Track (Portable or Permanent).  
Equipment Corp. of America, Chicago, Ill.  
Sweet's Steel Co., Willimantic, Pa.

TRACTORS (Industrial).  
Atlas Car & Mfg. Co., The, Cleveland, O.  
Caterpillar Tractor Co., Peoria, Ill.  
International Harvester Co. of America, Inc., Chicago, Ill.

—(Road).  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Caterpillar Tractor Co., Peoria, Ill.

TRAILERS (Arch-Girder, Heavy Duty).  
Williams Co., G. H., Erie, Pa.

TRAMWAYS, (Aerial Wire Rope).  
American Steel & Wire Co., Baltimore, Md.

TRANSFORMERS.  
General Electric Co., Schenectady, N. Y.  
—(Used).  
Electric Service Co., Cincinnati, O.

TRANSMISSION TOWERS  
(Galvanized).  
McClintic-Marshall Co., Pittsburgh, Pa.

TRENCH MACHINERY. See  
Excavators (Trench).

TRI-SODIUM PHOSPHATE.  
Grasselli Chemical Co., Inc., Birmingham.

TRUCK CRANES.  
Universal Crane Co., Lorain, O.

TRUCKS (Industrial).  
Atlas Car & Mfg. Co., The, Cleveland, O.  
—(Motor).  
International Harvester Co. of America, Inc., Chicago, Ill.

TUBES (Boiler.) See Boiler  
Tubes.

TUBING (Seamless Steel).  
National Tube Co., Pittsburgh, Pa.  
Timken Rolling Bearing Co., Canton, O.

TURBINES (Hydraulic).  
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.  
Smith Co., B. Morgan, York, Pa.  
—(Steam).  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Delaval Steam Turbine Co., Trenton, N. J.  
General Electric Co., Schenectady, N. Y.

TURNUCKLES.  
Bussell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.

TURNTABLES.  
American Bridge Co., New York, N. Y.  
Virginia Bridge & Iron Co., Roanoke, Va.  
—(Portable for Motor Trucks).  
Blow-Knox Co., Pittsburgh, Pa.

UNIONS.  
Dart Mfg. Co., E. M., Providence, R. I.

VALVES.  
Laddow Valve Mfg. Co., The, Troy, N. Y.  
Lunkenheimer Co., The, Cincinnati, Ohio.  
Merco Nordstrom Valve Co., San Francisco, Cal.

Mueller Co., Decatur, Ill.  
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

Westinghouse Traction Brake Co., Wilmerding, Pa.

—(Acid Proof).  
Lunkenheimer Co., The, Cincinnati, Ohio.

—(Corrosive Liquids).  
La Bour Co., Elkhart, Ind.

—(Gate).  
Laddow Valve Mfg. Co., The, Troy, N. Y.  
Lunkenheimer Co., The, Cincinnati, Ohio.  
Wood & Co., R. D., Philadelphia, Pa.

—(Non-Corrosive Liquids).  
La Bour Co., Elkhart, Ind.

VAULTS (Bank and Safe Deposit).  
York Safe & Lock Co., York, Penna.

VENTILATORS (Roof).  
Merchant & Evans Co., Philadelphia, Pa.

WARDROBES (Hygienic,  
School).  
Wilson Corp., The J. G., New York.

WAREHOUSING.  
General Warehouse & Storage Co., Atlanta, Ga.

WATER HEATERS.  
Finnigan Co., Inc., J. J., Atlanta, Ga.

WATERPROOFING (For Brick,  
Concrete, Granite).  
Seaborn, Sons, Inc., L. New York.

WATER Purification.  
Bacharach & Co., E. W., Kansas City, Mo.  
International Filter Co., Chicago, Ill.  
Roberts Filter Mfg. Co., Darby (Phila.), Pa.

—Softening Apparatus (Purifying).  
American Water Softener Co., Phila., Pa.  
International Filter Co., Chicago, Ill.

—Works Supplies and Appliances.  
Amer. Cast Iron Pipe Co., Birmingham.  
Cast Iron Pipe Research Assn., Chicago.  
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.

Leadite Co., Philadelphia, Pa.  
Mueller Co., Decatur, Ill.  
U. S. Pipe & Foundry Co., Burlington, N. J.  
Wood & Co., R. D., Philadelphia, Pa.

WELDING.  
Charleston Dry Dock & Machine Co., Charleston, S. C.  
Hedges-Walsh-Weidner Co., Chattanooga, Tenn.  
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.  
United Welding Co., Middletown, O.

WELDING APPARATUS (Electric Arc).  
General Electric Co., Schenectady, N. Y.

WELL CONTRACTORS (Oil,  
Artesian, etc.).  
Peterburg Mchry. Pump & Well Co., Peterburg, Va.  
Virginia Mchry. & Well Co., Richmond, Va.

WHEELS AND AXLES.  
Carnegie Steel Co., Pittsburgh, Pa.

WIRE (All Kinds).  
American Steel & Wire Co., Chicago.  
Jones & Laughlin Steel Corp., Pittsburgh, Pa.  
Seneca Wire & Mfg. Co., Fostoria, O.

—(Barbed Wire, etc.).  
American Steel & Wire Co., Baltimore, Md.  
Gulf States Steel Co., Birmingham, Ala.  
Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Fence).  
Cyclone Fence Co., Waukegan, Ill.  
Robertson Steel & Iron Co., W. F., Cincinnati, O.  
Stewart Iron Works Co., Cincinnati, O.

—(Flat and Round).  
American Steel & Wire Co., Baltimore, Md.  
Roebling's Sons Co., John A., Trenton, N. J.  
Seneca Wire & Mfg. Co., Fostoria, O.

—(Galvanized and Annealed).  
Gulf States Steel Co., Birmingham, Ala.  
Seneca Wire & Mfg. Co., Fostoria, O.

—(Cloth (Iron, Steel, Copper,  
Brass, etc.).  
Harrington & King Perf. Co., Chicago.  
Roebling's Sons Co., John A., Trenton, N. J.  
Seneca Wire & Mfg. Co., Fostoria, O.

—(Goods).  
Cyclone Fence Co., Waukegan, Ill.

—(Rope (Transmission, Hoisting,  
Haulage).  
American Steel & Wire Co., Chicago, Ill.  
Roebling's Sons Co., John A., Trenton, N. J.

—(Rope Clips).  
American Steel & Wire Co., Baltimore, Md.

—(Stapling).  
Seneca Wire & Mfg. Co., Fostoria, O.

—(Telephone and Telegraph).  
American Steel & Wire Co., Baltimore, Md.

—(Welding).  
American Steel & Wire Co., Chicago, Ill.  
Roebling's Sons Co., John A., Trenton, N. J.  
Seneca Wire & Mfg. Co., Fostoria, O.

ZINC CHLORIDE.  
Grasselli Chemical Co., Inc., Birmingham.

ZINC META ARSENITE (Wood  
Preservative).  
Curtin-Hows Corp., New York City.  
Gulf States Creos. Co., Hattiesburg, Miss.

## LUNKENHEIMER



Iron Body Bronze Mounted  
Gate Valve

THE LUNKENHEIMER CO.  
CINCINNATI, OHIO, U.S.A.  
NEW YORK, CHICAGO, BOSTON, PHILADELPHIA,  
PITTSBURGH, SAN FRANCISCO, LONDON,  
EXPORT DEPT. 206-218 MADISON AVE., NEW YORK

6-64-62

## Stop the Leaks

In the construction of Dart Unions, the spherically constructed Bronze to Bronze seats eliminate the possibility of a leak. Extra heavy iron ends add strength and durability. Every Union is tested, and we guarantee to replace any defective union returned to us with two perfect ones.

We will mail you a free sample on request.

A shape and size to fit every need. Flanges, L's, T's, etc.



DART  
UNIONS

E. M. DART MFG. CO., Providence, R. I.

The Fairbanks Co., Sales Agent.

Dart Union Co., Ltd., Toronto, Canada.

## Designers and Fabricators of Hot Galvanized Steel Structures

## Transmission and Radio Towers Substation Structures Standard Poles

Quotations on request

## Bessemer Galvanizing Works

Birmingham, Alabama

**Le Bourg AERIAL TOWER**

Better Reception For Your Radio!

Radio reception is clearer and stronger, with less man-made static, when LeBOURG STEEL AERIAL TOWERS are used. Installed in a few minutes on any type roof. At your dealer, or sent express paid with instructions, for \$3.00. Descriptive folder on request. Attractive discount to agents, and jobbers.

A. LeBOURG, GADSDEN, ALA.

# Index of Advertisements

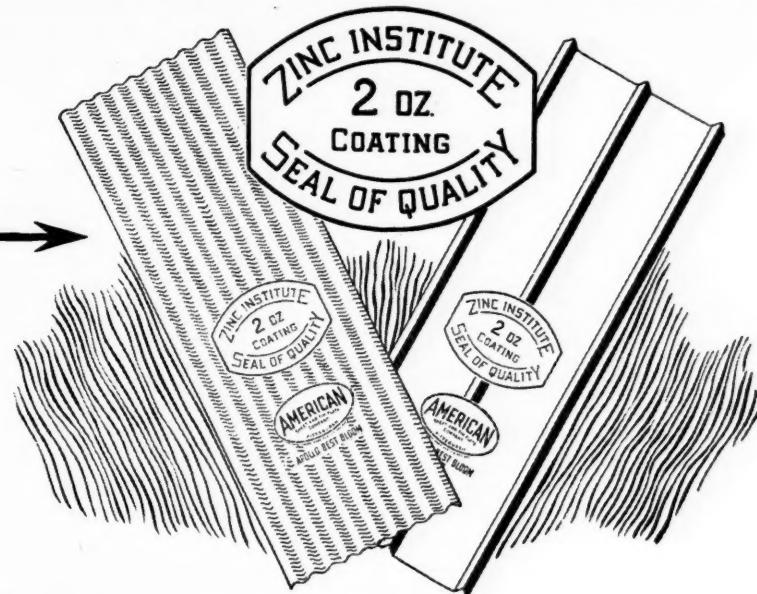
<b>A</b>	<b>B</b>	<b>C</b>
Albert & Davidson Pipe Corp. 57	Davison Chemical Co. 64	Caldwell Co., W. E. 45
Albert Pipe Supply Co. 57	De Laval Steam Turbine Co. 47	Carey Co., Philip 6
Allis-Chalmers Mfg. Co. 73	Delaware Reg. Trust Co. 53	Caterpillar Tractor Co. 59
Alpaugh & Sons, Chas. W. 8	Detroit Stoker Co. 12	Cattie & Bros., Joseph P. 74
American Bridge Co. 79	Dietrich Brothers 78	Cement Gun Construction Co. 51
American Cast Iron Pipe Co. 76	Dow & Smith 8	Central of Georgia Railway 64
American Creosote Works, Inc. 49	<b>E</b>	Central Pipe & Supply Co. 57
American Elev. & Machine Co. 51	Earle Gear & Machine Co. 69	Charlottesville Leather Belting Co. 51
American Limestone Co. 62	Electric Bond & Share Co. 53	Chase, William J. J. 8
American Sheet & Tin Plate Co. 83	Electric Service Co. 57	Chattanooga Boiler & Tank Co. 45
American Water Softener Co. 73	Electric Storage Battery Co. 84	Chicago Bridge & Iron Works 47
Andrews Co., A. H. 70	Engineering Service Corp. 8	Chicago Perforating Co. 47
Arundel Corporation 62	Enterprise Galvanizing Co. 74	Cole Mfg. Co., R. D. 45
Atlantic Creosoting Co. 49	Equipment Corp. of America 58	Consolidated Iron-Steel Mfg. Co. 63
Atlantic Gulf & Pacific Co. 60	Erdle Perforating Co. 47	Consoer, Olden & Quinlan, Inc. 8
Atlas Car and Manufacturing Co. 60	<b>F</b>	Continental Gin Co. 73
Audit Company of the South 80	Fiske-Carter Construction Co. 8	Converse & Co., J. B. 8
Austin Bros. Bridge Co. 80	Friend & Co. 62	Cornell-Young Co. 9
	Froehling & Robertson 9	Cowper Co., The John W. 8
	Fulton Bag & Cotton Mills. 51	Cramer, Robert 8
	<b>G</b>	Crucible Steel Casting Co. 60
	Galveston Wharf Co. 67	Cutler Mail Chute Co. 49
	Gardner & Howe 8	<b>D</b>
	General Machine Works 74	Dake Engine Co. 64
	Georgia Iron Works 60	Dart Mfg. Co., E. M. 81
	Georgia Marble Co. 79	Davis & Son, G. M. 80
	Georgia Sand & Gravel Co. 81	
	Gerdin Bros. 74	
	Glamorgan Pipe & Fdry. Co. 76	
	Goder, Joseph 9	
	Goldens' Fdry. & Mch. Co. 77	
	Greenpoint Iron & Pipe Co. 62	
	Greiner & Co., J. E. 69	
	Gulf Refining Co. 60	
	Gulf States Creosoting Co. 8	
	Gulf States Steel Co. 5	
	Gunite Concrete & Constr. Co. 9	
	Gunite Construction Co. 49	
	<b>H</b>	
	Haas Pattern Co., A. W. 74	
	Hall, J. Henry 8	
	Hardaway Contracting Co. 59	
	Harrington & King Perf. Co. 47	
	Harrub Engr. Co., C. N. 8	
	Hedges Walsh Weidner Co. 68	
	Heath Co., J. S. 53	
	Hendrick Mfg. Co. 47	
	Hill & Griffith Co. 74	
	Hills & Youngberg 8	
	Hoosier Engineering Co. 8	
	Hornbuckle Contracting Co. 47	
	Howard-Hickory Co. 69	
	Huey, S. E. 8	
	Hunt Co., Robert W. 9	
	Hyman-Michaels Co. 58	
	<b>I</b>	
	Ingalls Iron Works Co. 73	
	International Filter Co. 8	
	<b>J</b>	
	Jackson Lumber Co. 49	
	Jefferson Foundry Co. 69	
	<b>K</b>	
	Kansas City Bridge Co. 8	
	Kennedy-Rieger Drilling Co. 9	
	Kerlow Steel Flooring Co. 73	
	Knowles, Morris, Inc. 80	
	<b>L</b>	
	Leadite Co. 53	
	Le Bourg, A. 12	
	Lee Engineering Corp., W. S. 8	
	Lima Excavator Sales Agency 58	
	Lockwood Greene Engrs., Inc. 9	
	Lombard Iron Works & Supply Co. 78	
	Lunkenheimer Co. 81	
	<b>M</b>	
	MacElwee & Crandall, Inc. 8	
	Main, Inc., Chas. T. 8	
	Manhattan Perforated Metal Co. 47	
	Manistee Iron Works Co. 76	
	Marine Metal & Supply Co. 57	
	McCallum Inspection Co. 8	
	Martin, Joe B. 62	
	McCravy Co., J. B. 9	
	Meigs, Bassett & Slaughter, Inc. 51	
	Milburn, Heister & Co. 8	
	Model Land Co. (Flagler System) 64	
	Mott Core Drilling Co. 9	
	Moyer Co., Tilghman 9	
	Mueller Co. 76	
	Mundt & Sons, Chas. 47	
	Myers & Bro. Co., F. E. 51	
	Myers & Sons, J. L. 62	
	<b>N</b>	
	National Paving Brick Asso. 9	
	National Traffic Guard Co. 77	
	National Tube Co. 57	
	North Carolina Granite Co. 60	
	Norfolk & Western Railway 66	
	<b>O</b>	
	O'Brien Machinery Co. 49	
	Owen Bucket Co. 49	
	Owensboro Sewer Pipe Co. 76	
	<b>P</b>	
	Partridge, Arthur S. 57-57	
	Pennsylvania Drilling Co. 69	
	Perry, Buxton, Doane Co. 58	
	Phillips & Davies, Inc. 58	
	Phoenix Iron Co., The 78	
	Picard Laboratories 8	
	Pipe Railing Construction Co. 51	
	Pittsburgh-Des Moines Steel Co. 45	
	Pittsburgh Testing Laboratory 8	
	Poe Piping & Heating Co. 8	
	Preacher & Co., Inc., G. Lloyd 8	
	Progressive Mfg. Co. 78	
	Proposal Advertisements 55-56	
	Provident Savings Bank & Trust Co. 53	
	<b>R</b>	
	Resale Department 57-58	
	Ripley Fdy. & Mch. Co. 62	
	Roanoke Iron & Bridge Wks. 79	
	Roberts Filter Mfg. Co. 73	
	Robins & Co., A. K. 69	
	Robertson Steel & Iron Co., W. F. 60	
	Roebling's Sons Co., John A. 4	
	Russell, Burdsall & Ward Bolt & Nut Co. 14	
	Rust Engineering Co. 70	
	Ryerson & Son, Jos. T. 12	
	<b>S</b>	
	Salem Foundry & Machine Works 69	
	Saville, Inc., Allen J. 9	
	Schofield's Sons Co., J. S. 80	
	Shore Line Builders, Inc. 73	
	Simplicity System Co. 62	
	Sirrine & Co., J. E. 9	
	Smallman-MacQueen Const. Co. 8	
	Smith, Elroy G. 8	
	Smith & Son Co., Oscar T. 53	
	Smith Co., S. Morgan. 7	
	Smith & Co., W. M. 58	
	Snead Architectural Iron Works 80	
	Snare Corp., Frederick 9	
	South Carolina Security Co. 53	
	Southern Erectors, Inc. 8	
	Southern Hotel 64	
	Southern Natural Gas Corp. 65	
	South Memphis Land Co. 64	
	Southwestern Laboratories 9	
	Sprague & Henwood, Inc. 9	
	Spring, Chas. Herbert 8	
	Steel and Lebby 8	
	Sterling Engine Co. 73	
	Steward Machine Co. 70	
	Stewart Iron Works Co. 12	
	Stillman and Van Siclen, Inc. 8	
	Steubner Iron Works, Inc., G. L. 60	
	Sweet's Steel Co. 60	
	<b>T</b>	
	Table of Contents 11	
	Taylor Forge & Pipe Wks. 76	
	Texas Power & Light Co. 12	
	Titusville Iron Works Co. 69	
	Tucker & Laxton 9	
	Turner, C. A. P. 8	
	<b>U</b>	
	United Cork Companies 51	
	Universal Crusher Co. 70	
	<b>V</b>	
	Virginia Bridge & Iron Co. 79	
	Virginia Engineering Co. 8	
	<b>W</b>	
	Walker Electrical Co. 8	
	Warner Service Co. 8	
	Webb Electric Co. 8	
	White Engineering Corp., J. G. 9	
	Whitman, Requardt & Smith 8	
	Whitney Metal Tool Co. 69	
	Wiedeman and Singleton, Inc. 8	
	Wiley & Wilson 9	
	Wood & Co., R. D. 75	
	Woodstock Slag Corp. 62	
	<b>Y</b>	
	Yoder Co. 51	
	York Safe & Lock Co. 43	
	Young & Selden Co. 53	
	<b>Classified Opportunities</b> 56-57	
	<b>Professional Directory Cards</b> 8-9	
	<b>Proposal Advertisements</b> 55-56	
	<b>Resale Department</b> 57-58	
	<b>Classified Index</b> 68	

See Classified Index for complete list of advertisers and products advertised. When corresponding with these firms, mention the MANUFACTURERS RECORD.



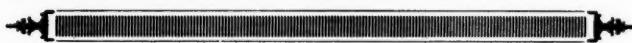
Now →

For Industrial and  
Rural Construction—



# AMERICAN HEAVILY COATED Galvanized

Specially Manufactured for  
Steel Roofing and Siding



The growing demand for heavily coated galvanized roofing and siding has resulted in this Company's manufacturing Corrugated and V-crimped Galvanized Sheets with TWO OUNCES of zinc coating per square foot—at least TWO-THIRDS MORE than the regular grade. This means longer life for comparatively little extra cost.

DOUBLE ASSURANCE of protection and service may be had by the use of this new product, as all the sheets are branded with the American Zinc Institute's "Seal of Quality" and the well-known APOLLO Best Bloom brand.

FURNISHED IN No. 28 GAUGE AND HEAVIER.

Write today for special circular describing this superior product.

This Company manufactures Black and Galvanized Sheets, Formed Roofing and Siding Products, Special Sheets, Tin and Terne Plates for all purposes.



## American Sheet and Tin Plate Company

GENERAL OFFICES: Frick Building, PITTSBURGH, PA.

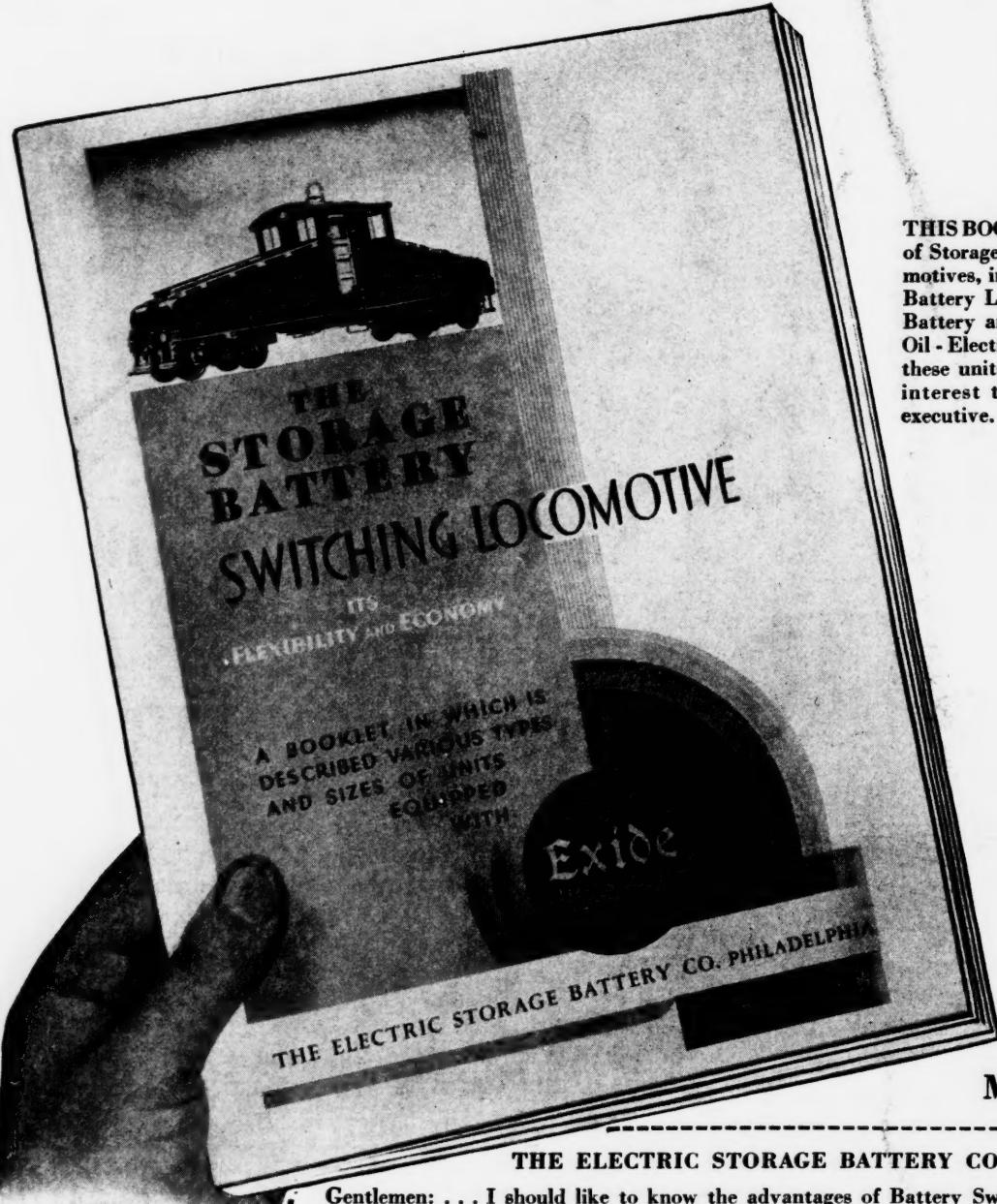
SUBSIDIARY OF UNITED STATES STEEL CORPORATION



ILLINOIS STEEL COMPANY  
MINNESOTA STEEL COMPANY  
NATIONAL TUBE COMPANY

THE LORAIN STEEL COMPANY  
INDUSTRIAL COAL, IRON & RAILROAD CO.  
UNIVERSAL ATLAS CEMENT COMPANY  
100 Broadway, New York, N.Y.

# Mail coupon for this 30-page Book...it shows how to CUT SWITCHING COSTS



THIS BOOKLET describes all types of Storage Battery Switching Locomotives, including Straight Storage Battery Locomotives, Combination Battery and Trolley, and Battery-Oil - Electrics. The advantages of these units, as presented, will be of interest to every transportation executive.

FILL IN . . .  
CLIP NOW . . .  
MAIL TODAY!

THE ELECTRIC STORAGE BATTERY CO., Philadelphia, Pa.

Gentlemen: . . . I should like to know the advantages of Battery Switching Locomotives and how to cut switching costs. Please send me booklet, "THE STORAGE BATTERY SWITCHING LOCOMOTIVE—Its Flexibility and Economy." It is understood this request involves no obligation.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ M.R.2

**Exide**  
IRONCLAD  
BATTERIES

